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(71) Applicant(s)

Fujitsu Limited

(Incorporated in Japan)

1-1 Kamikodanaka 4-chome, Nakahara-ku,
Kawasaki-shi, Kanagawa 211, Japan

(72) Inventor(s)

Hideo Oneda

(74) Agent and/or Address for Service

Haseltine Lake & Co

Imperial House, 15-19 Kingsway, LONDON,
WC2B 6UD, United Kingdom

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(56) Documents Cited

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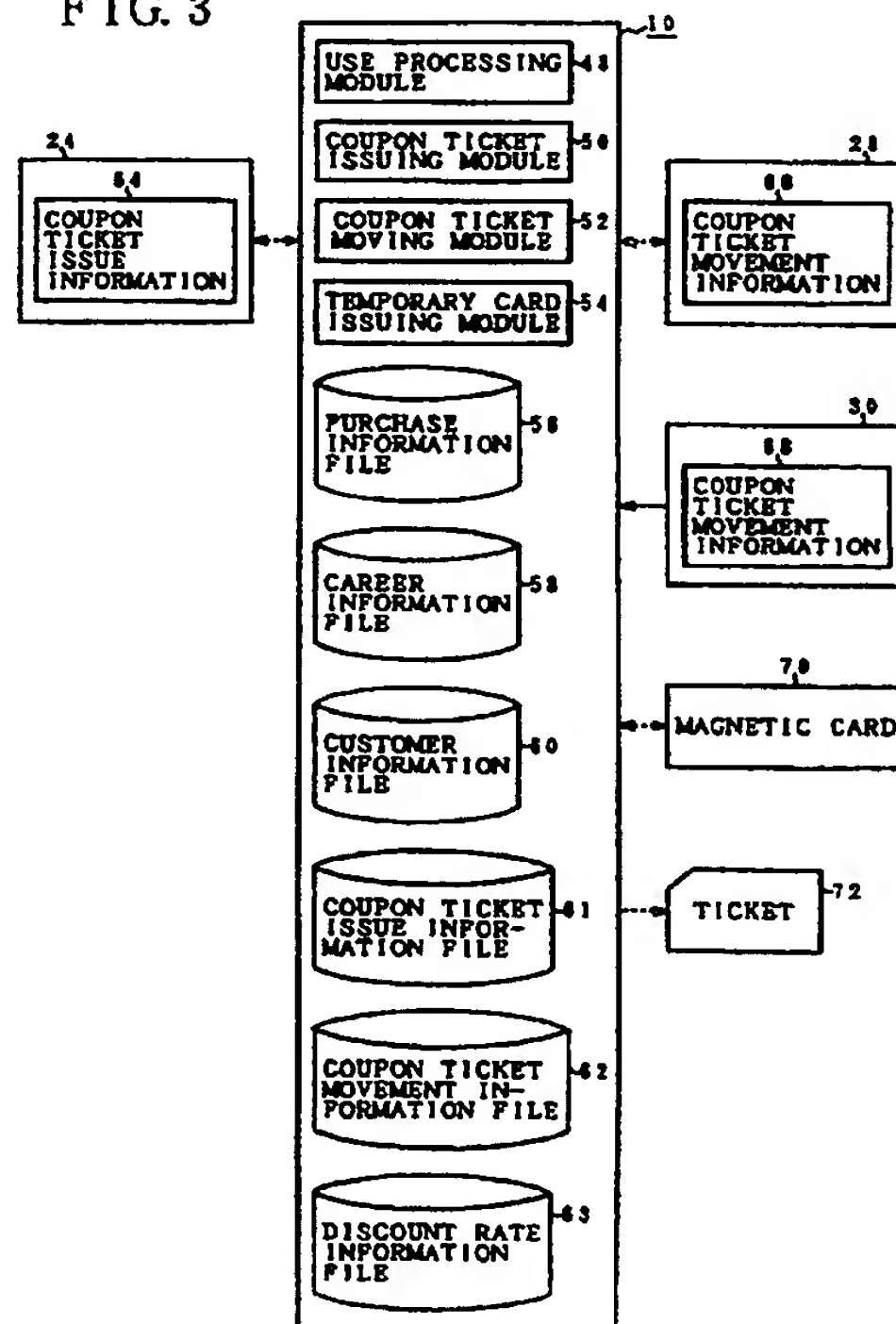
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INT CL⁶ G07B 1/00 3/00, G07F 7/00 7/08 7/10
ONLINE:EDOC,WPI

(54) Coupon ticket transfer system

(57) A ticketless system for use in air travel or the like and using an IC card comprises a coupon ticket issuing module 50 for recording coupon ticket issue information on a distribution source card 24 serving as a distribution source of a coupon ticket; a coupon ticket moving module 52 for recording coupon ticket movement information which transfers part of the coupon ticket of the card 24 to a distribution destination card 28 and enables it to be used; and a use processing module 48 for processing the use such as reservation, ticket issue, check-in, or boarding, by using the card 24 or the card 28. The system further includes a temporary card issuing module for issuing a temporary card for a user whose name is not registered on the system.

FIG. 3



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FIG. 1

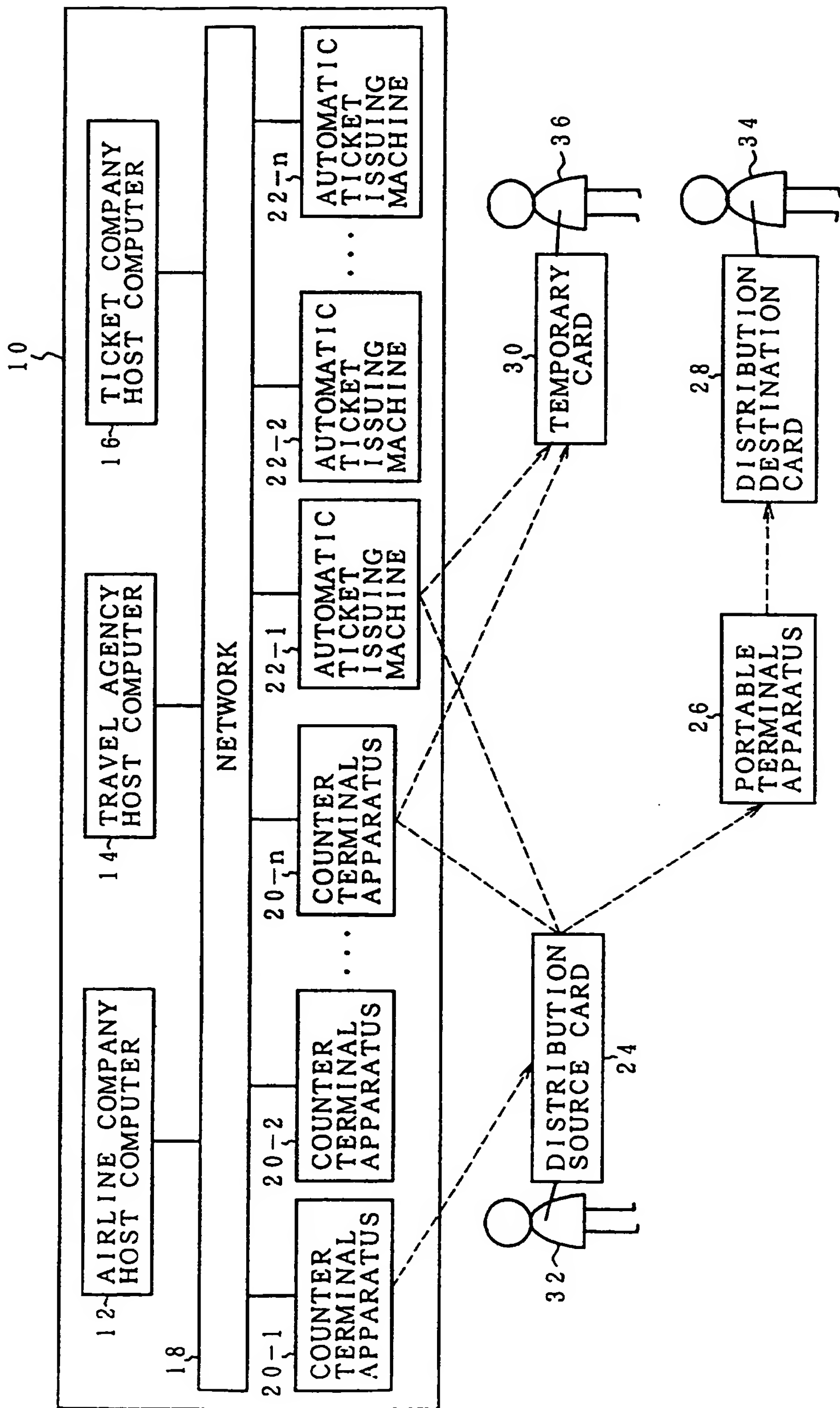


FIG. 2A

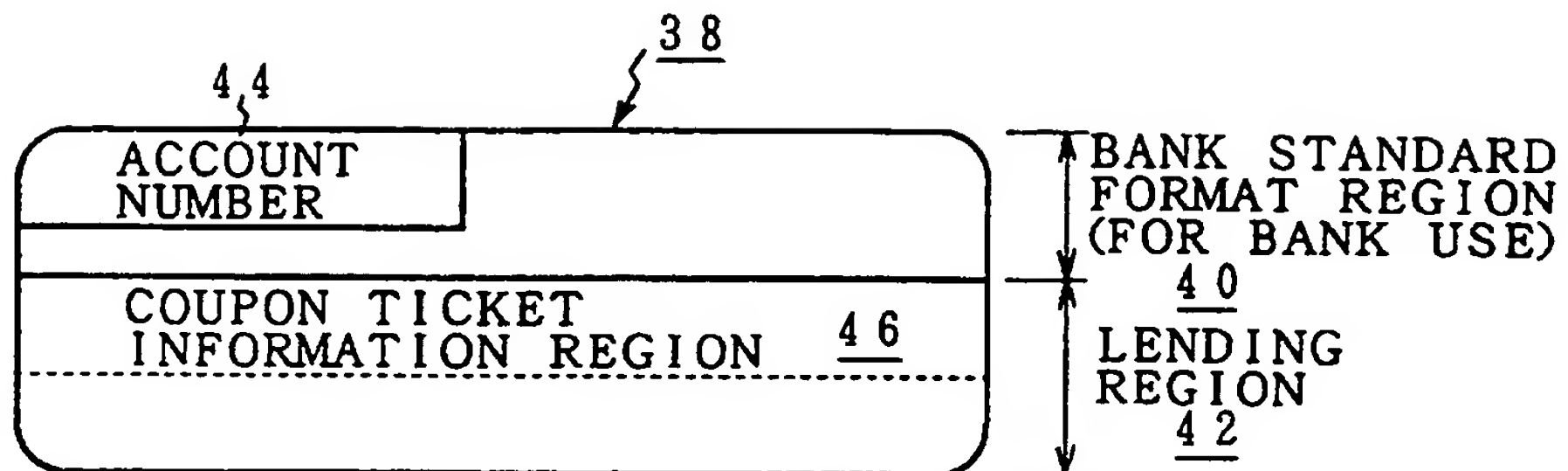


FIG. 2B

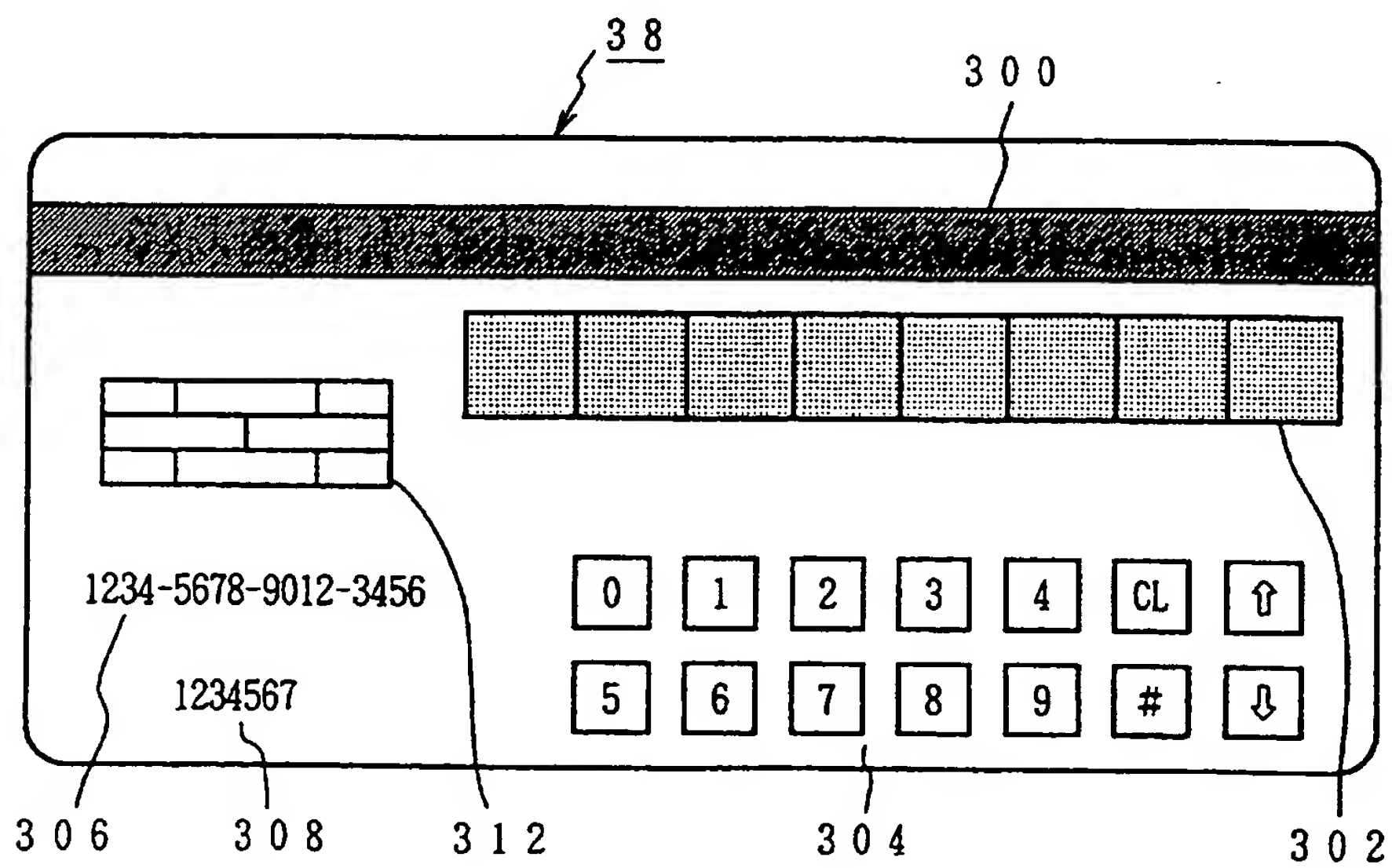


FIG. 2C

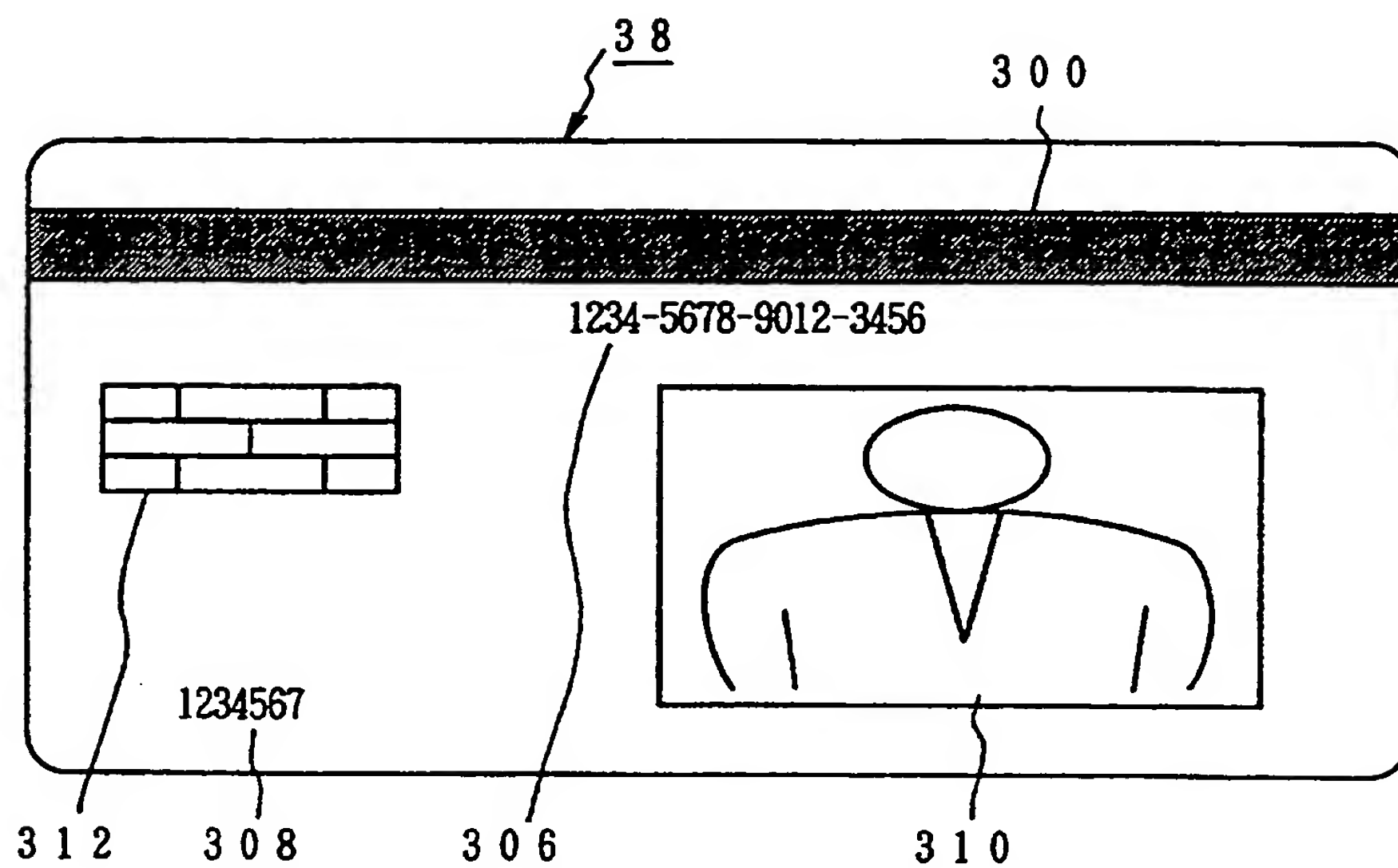


FIG. 3

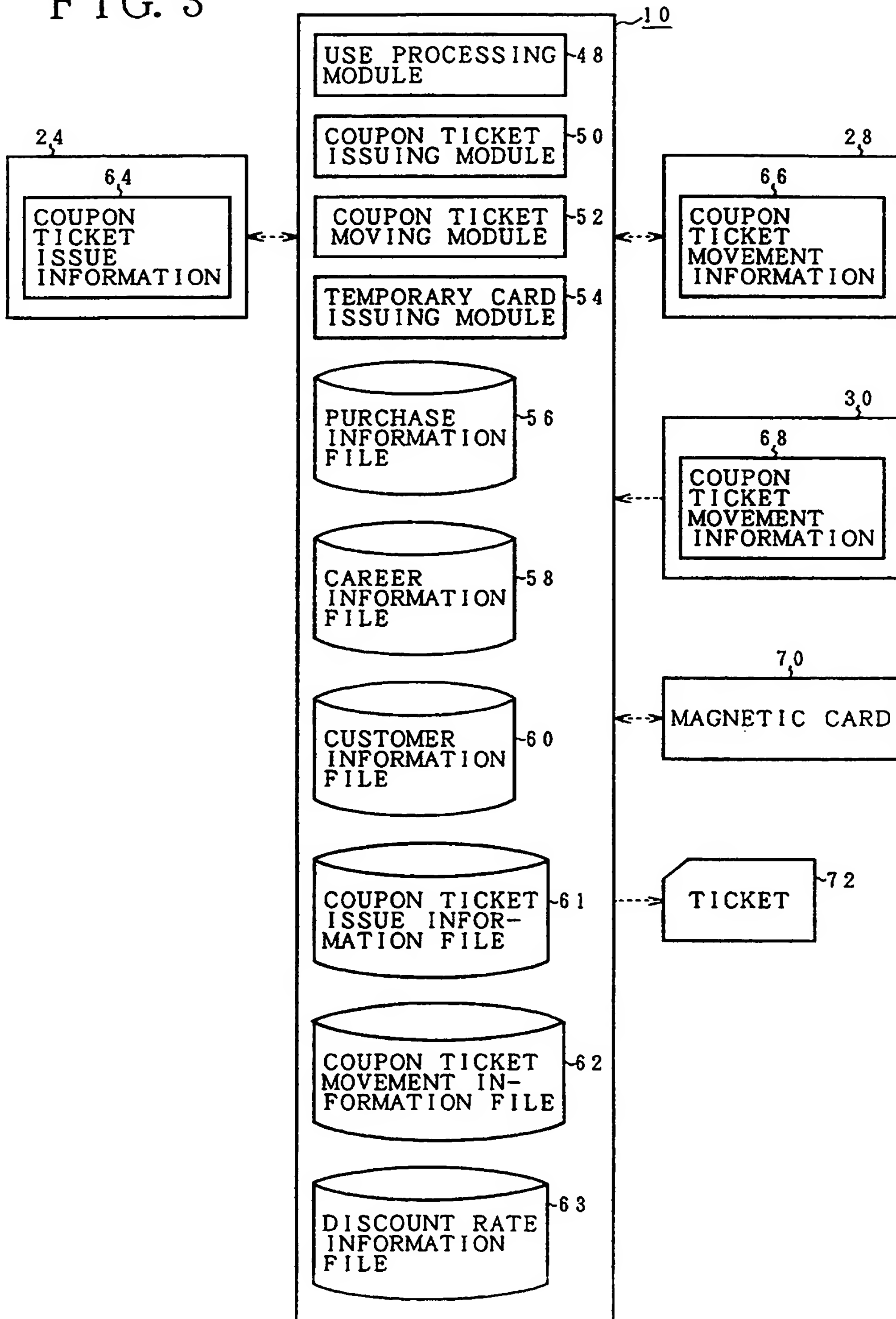
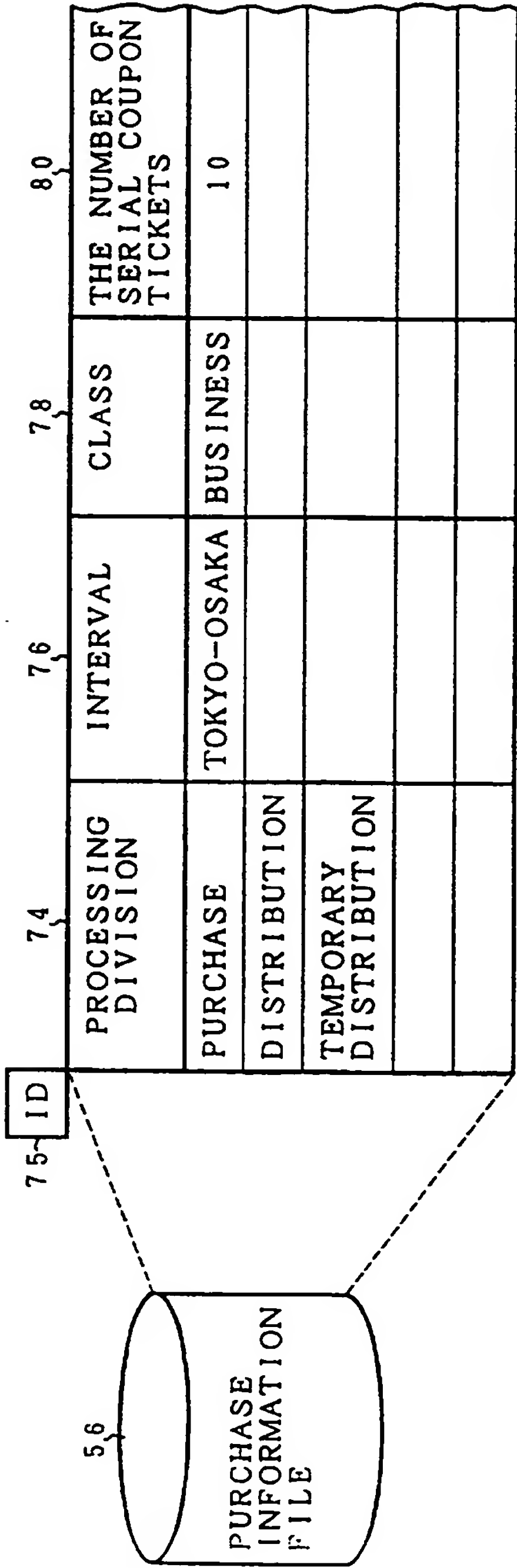


FIG. 4



82 }		84 }	85 }		86 }	88 }	90 }
THE NUMBER OF TIMES OF DISTRIBUTION	YEAR /MONTH /DAY	TERM OF VALIDITY	SETTLEMENT INFORMATION	DISTRIBUTION DESTINATION INFORMATION	THE NUMBER OF ISSUING TEMPORARY CARDS		
0	1996. 01. 20	1996. 04. 20	CASH				
3	1996. 02. 01	1996. 04. 20		B			
2	1996. 02. 10	1996. 04. 20			1		

FIG. 5

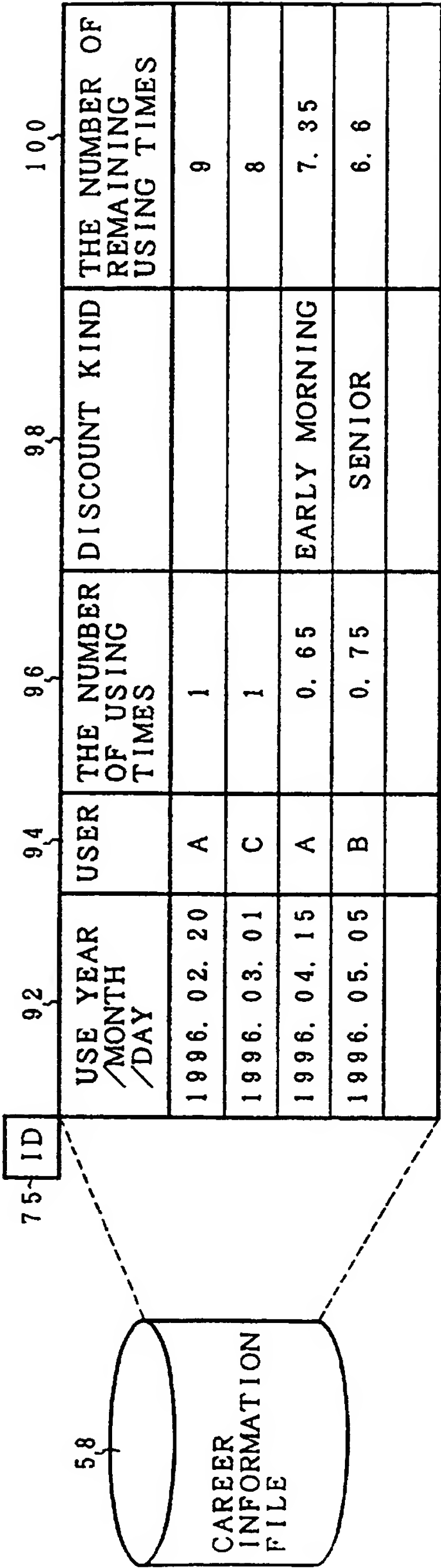


FIG. 6

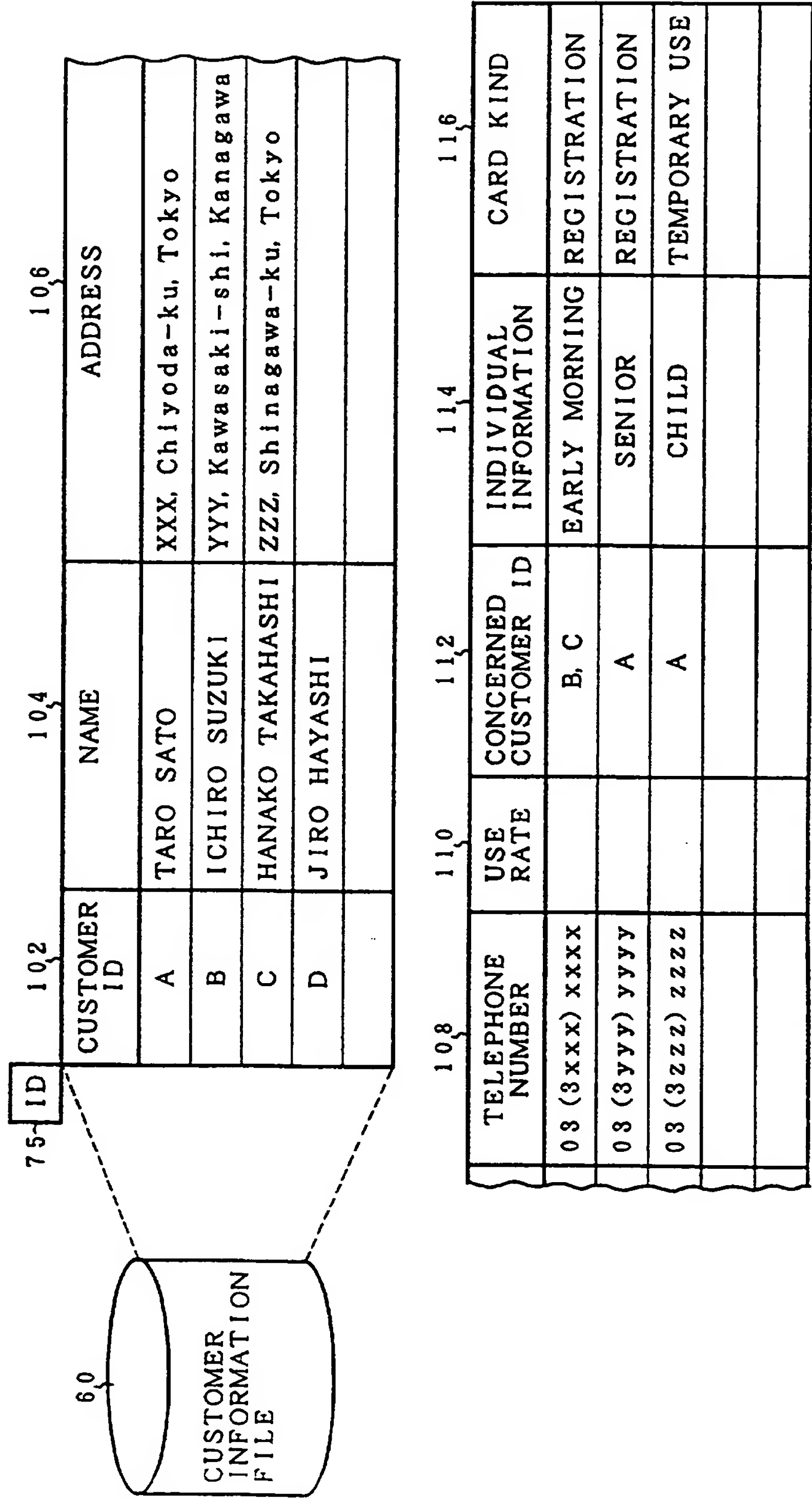


FIG. 7

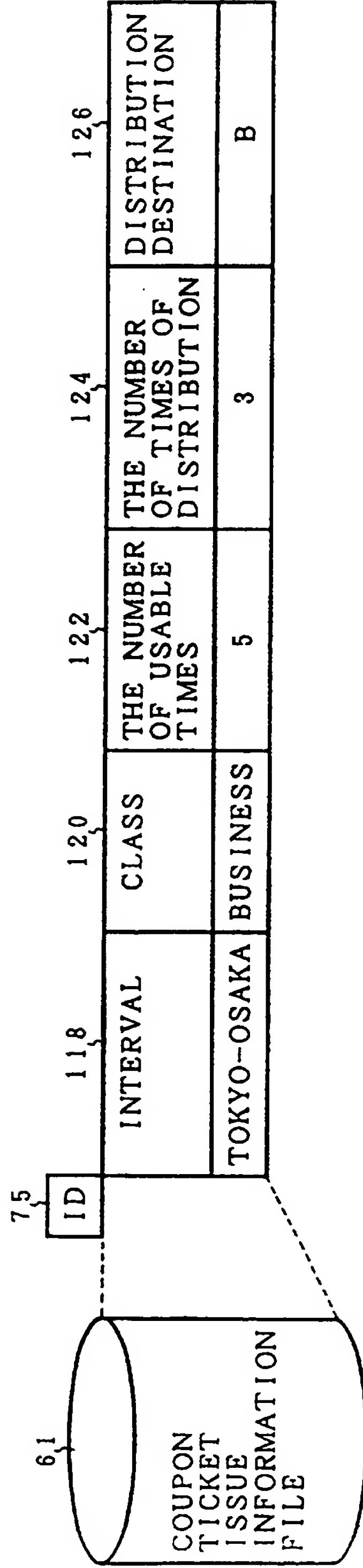


FIG. 8

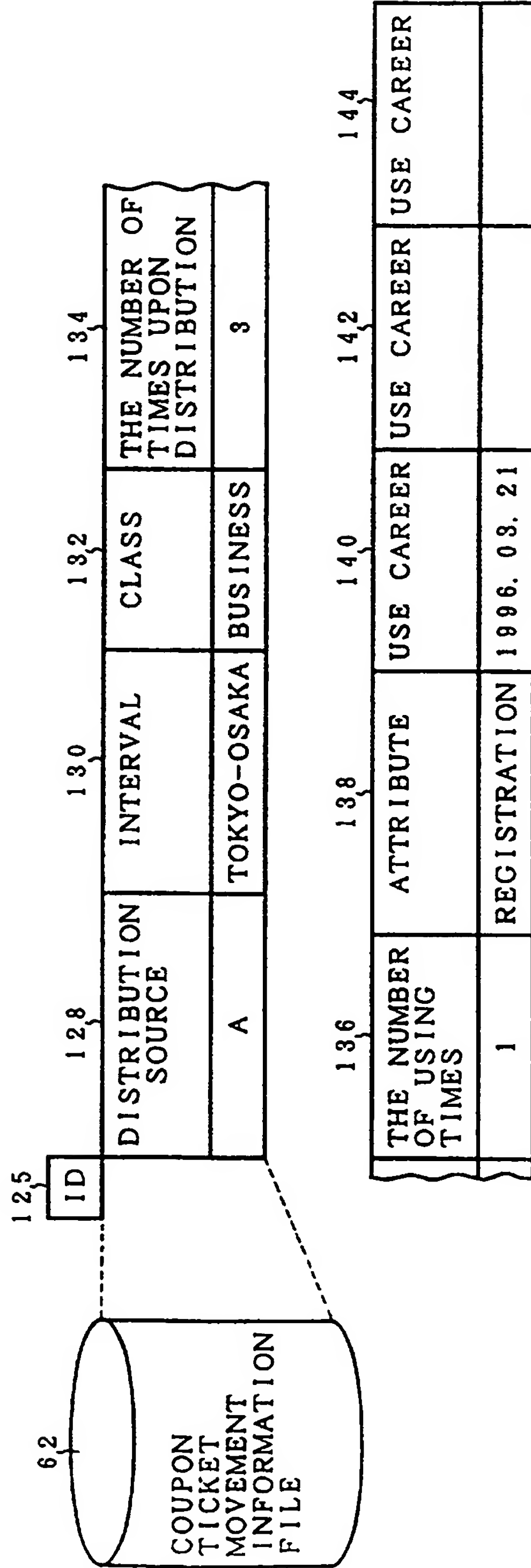


FIG. 9

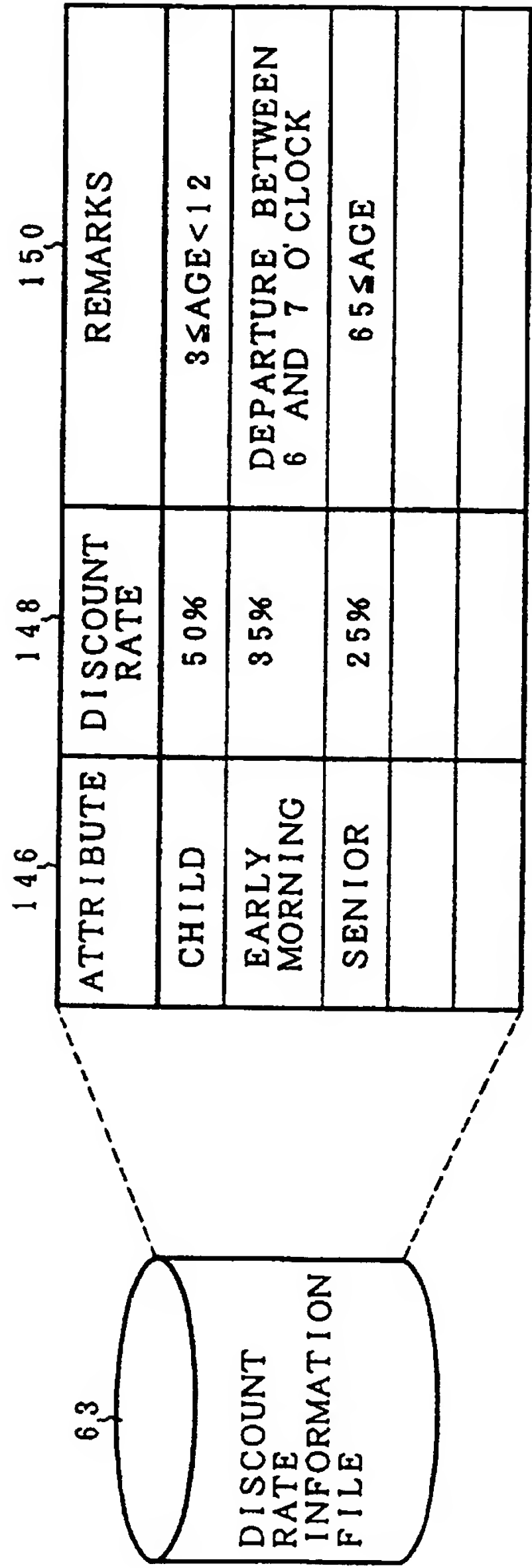


FIG. 10

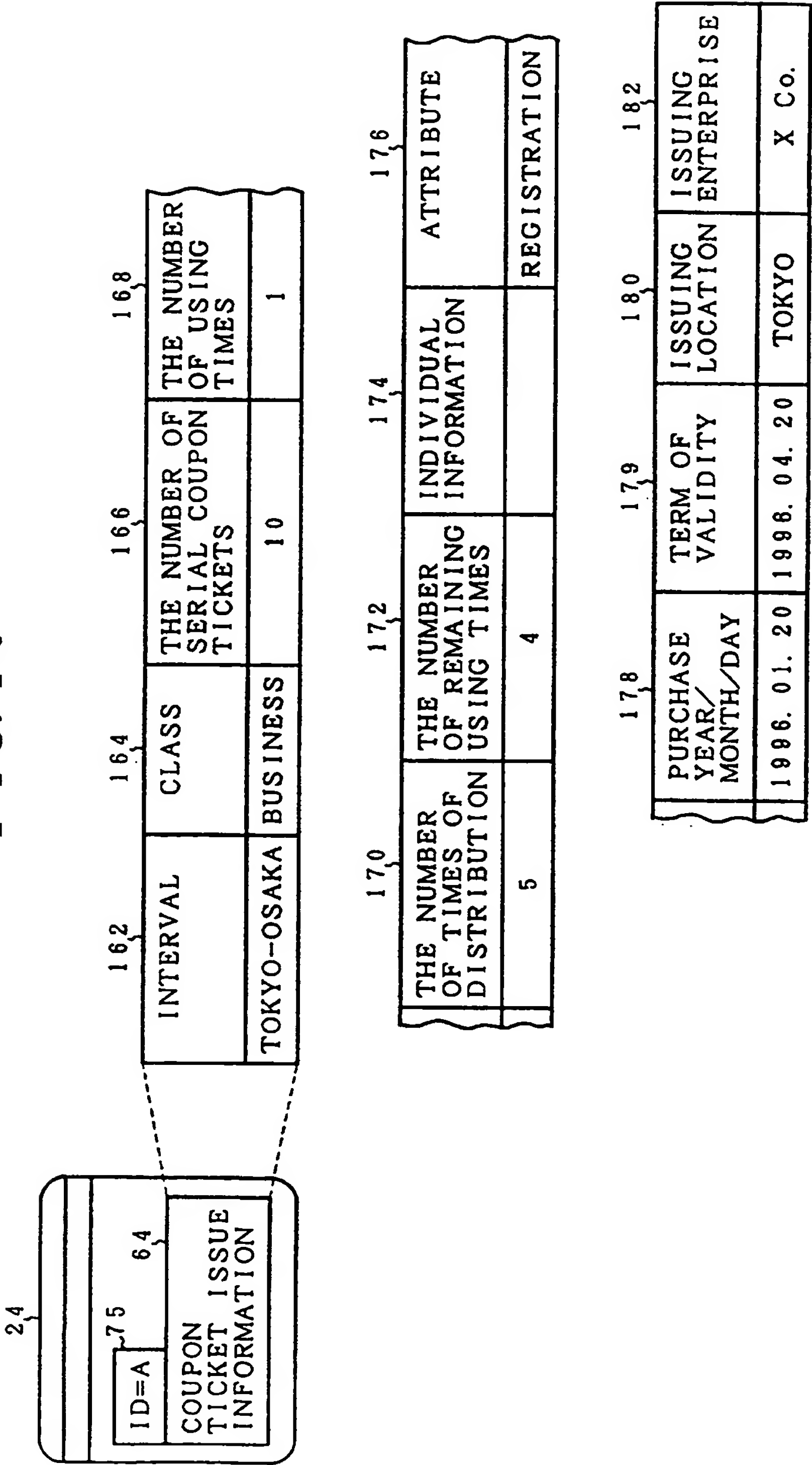


FIG. 11

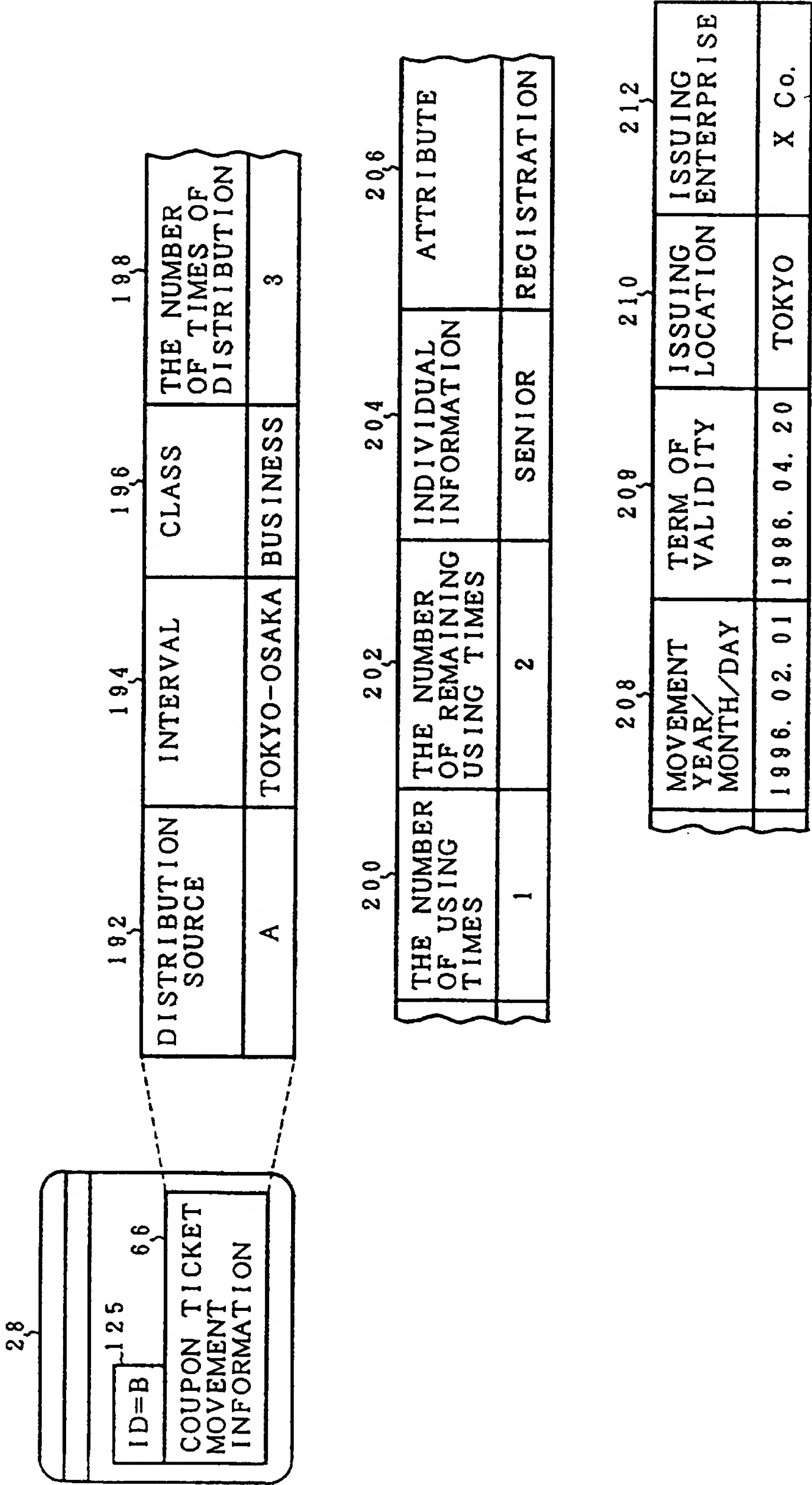


FIG. 12

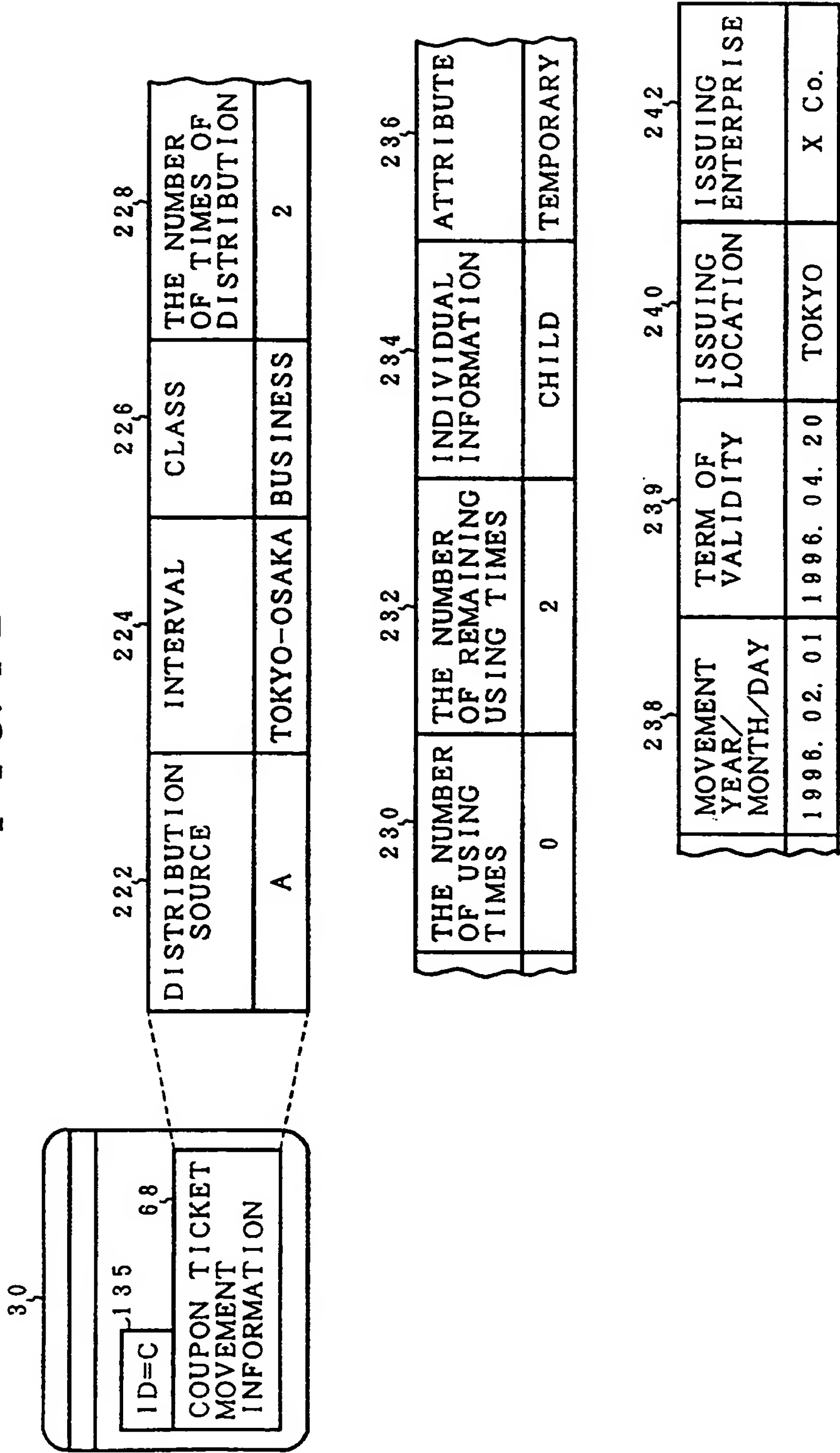


FIG. 13

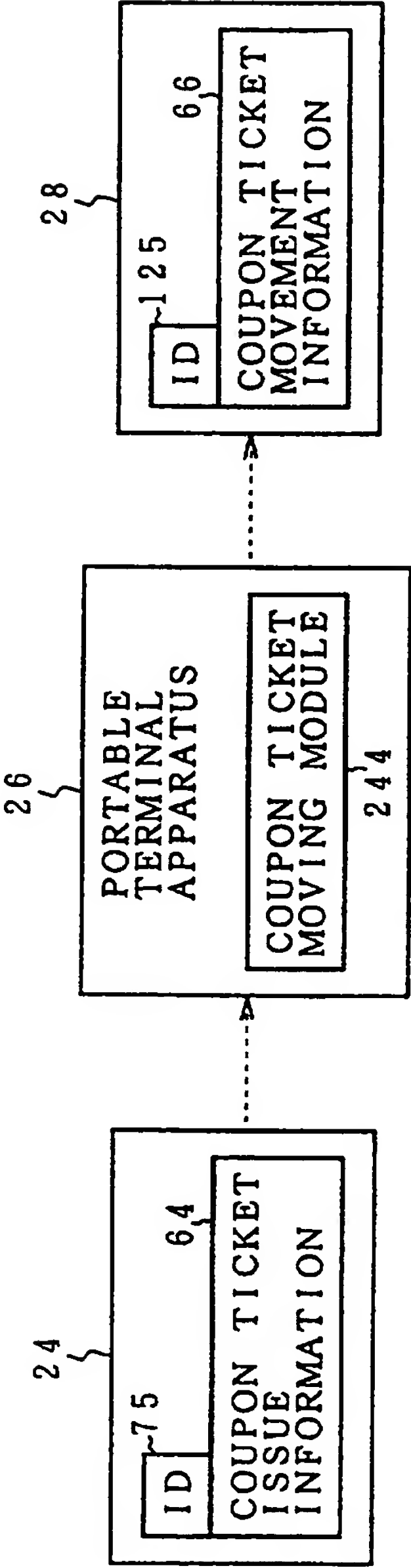


FIG. 14

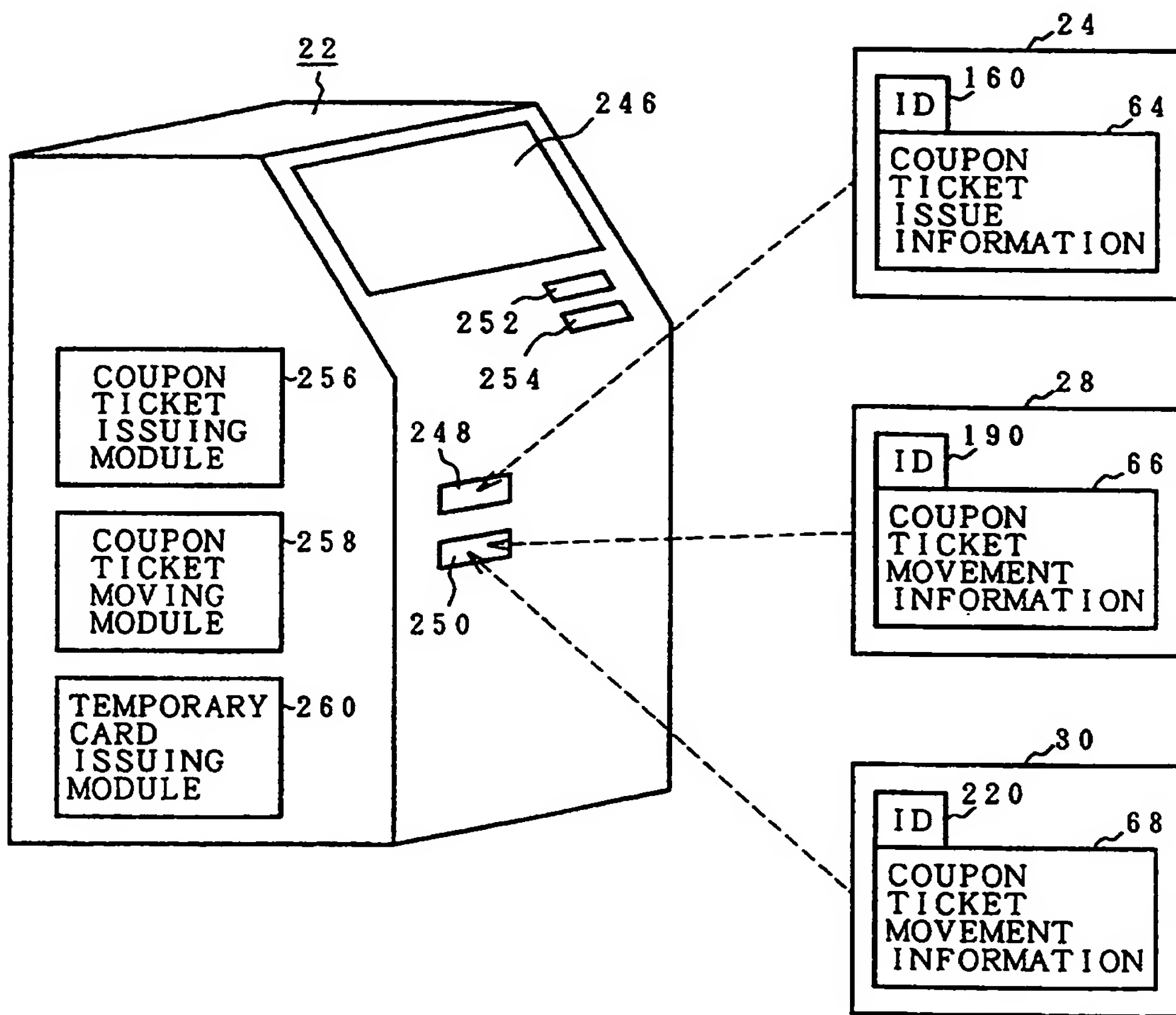


FIG. 15

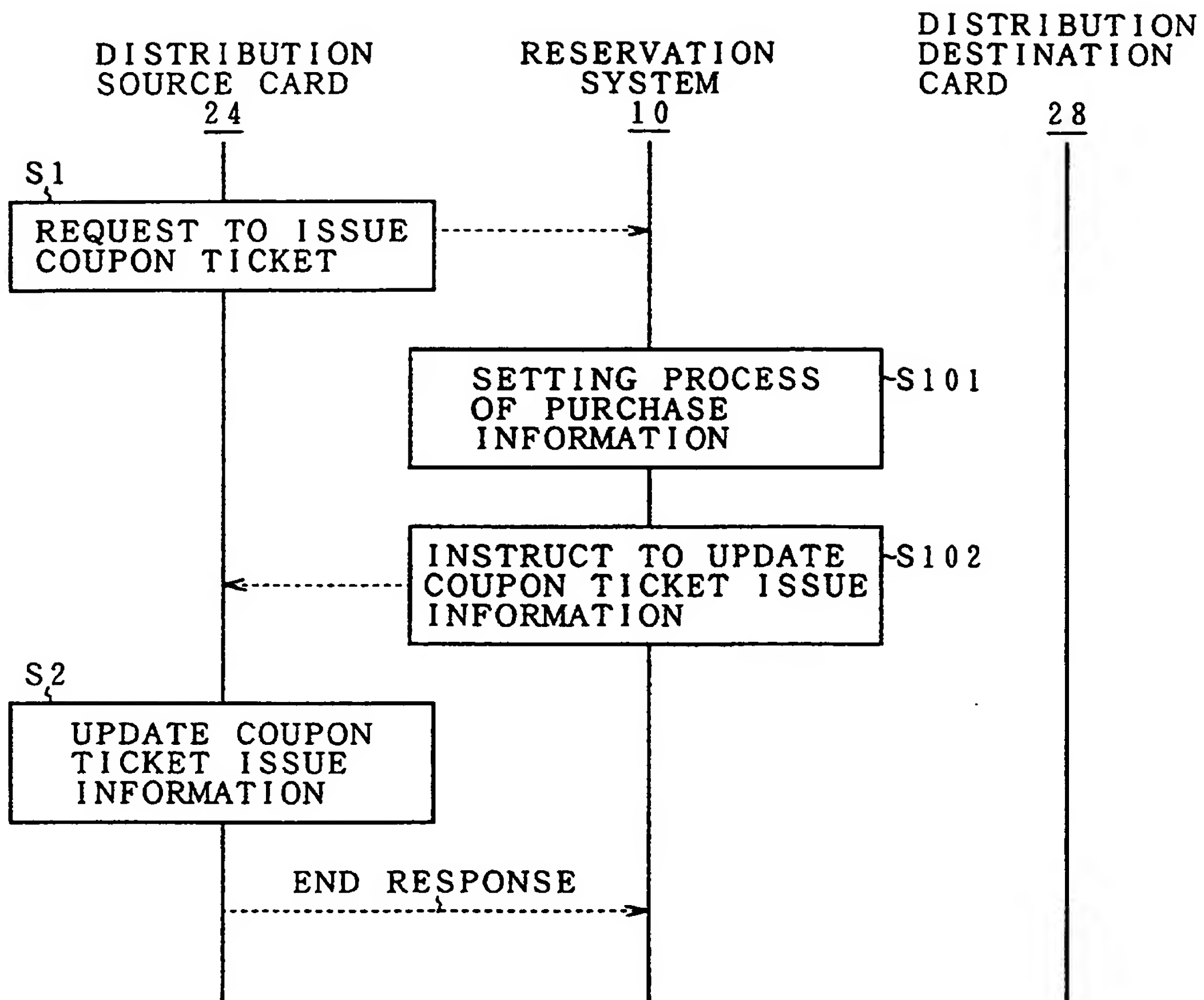


FIG. 16

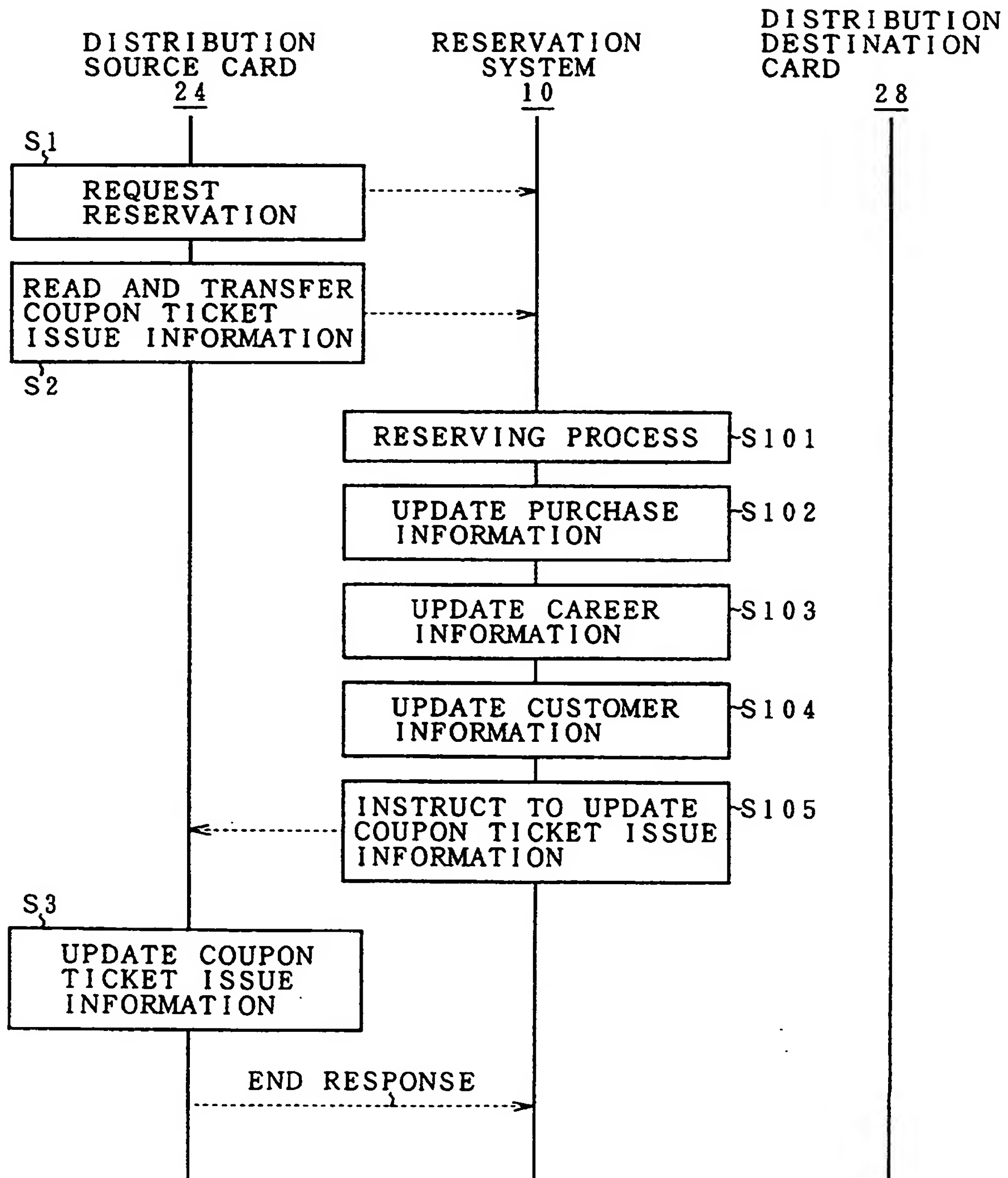


FIG. 17

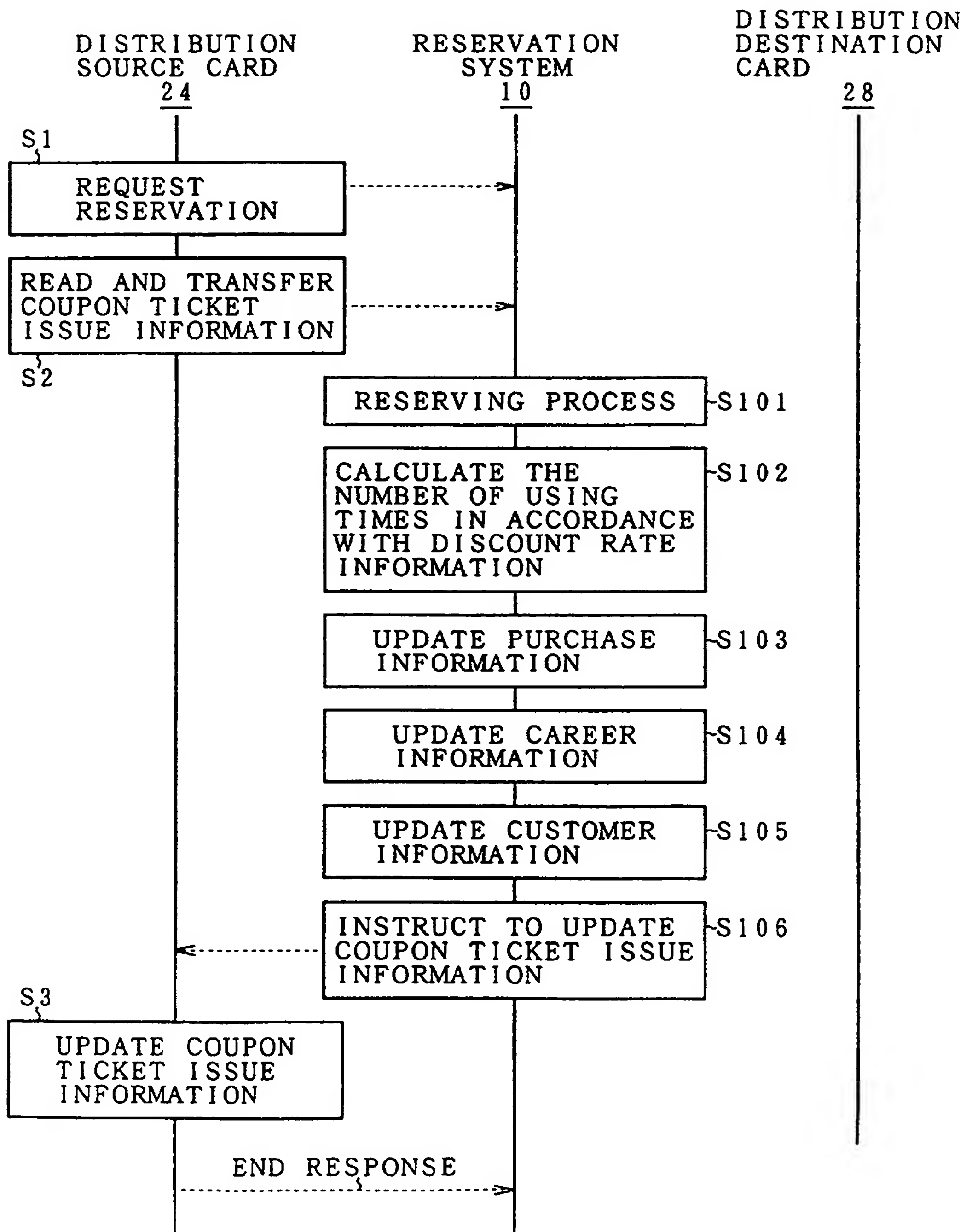


FIG. 18

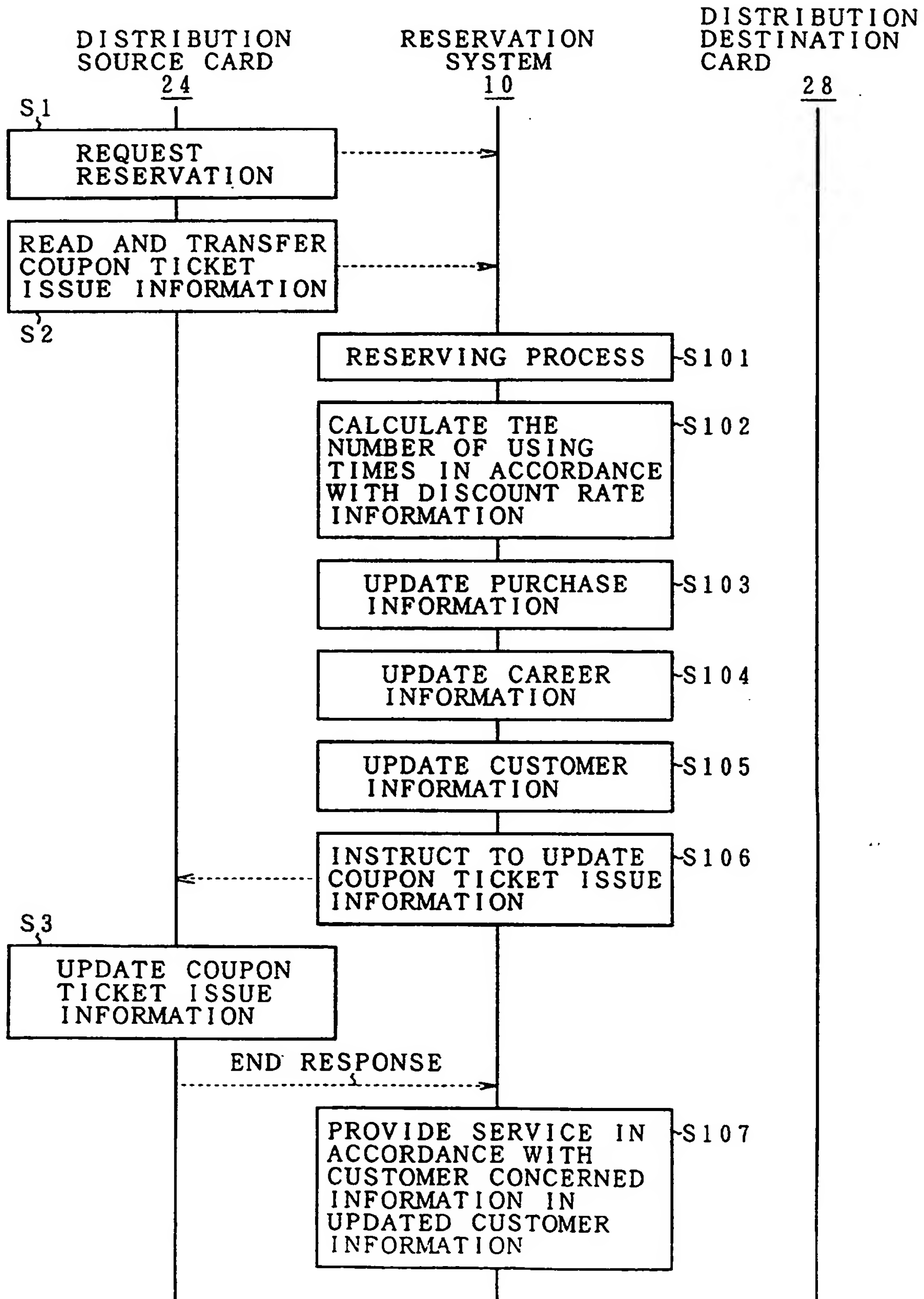


FIG. 19

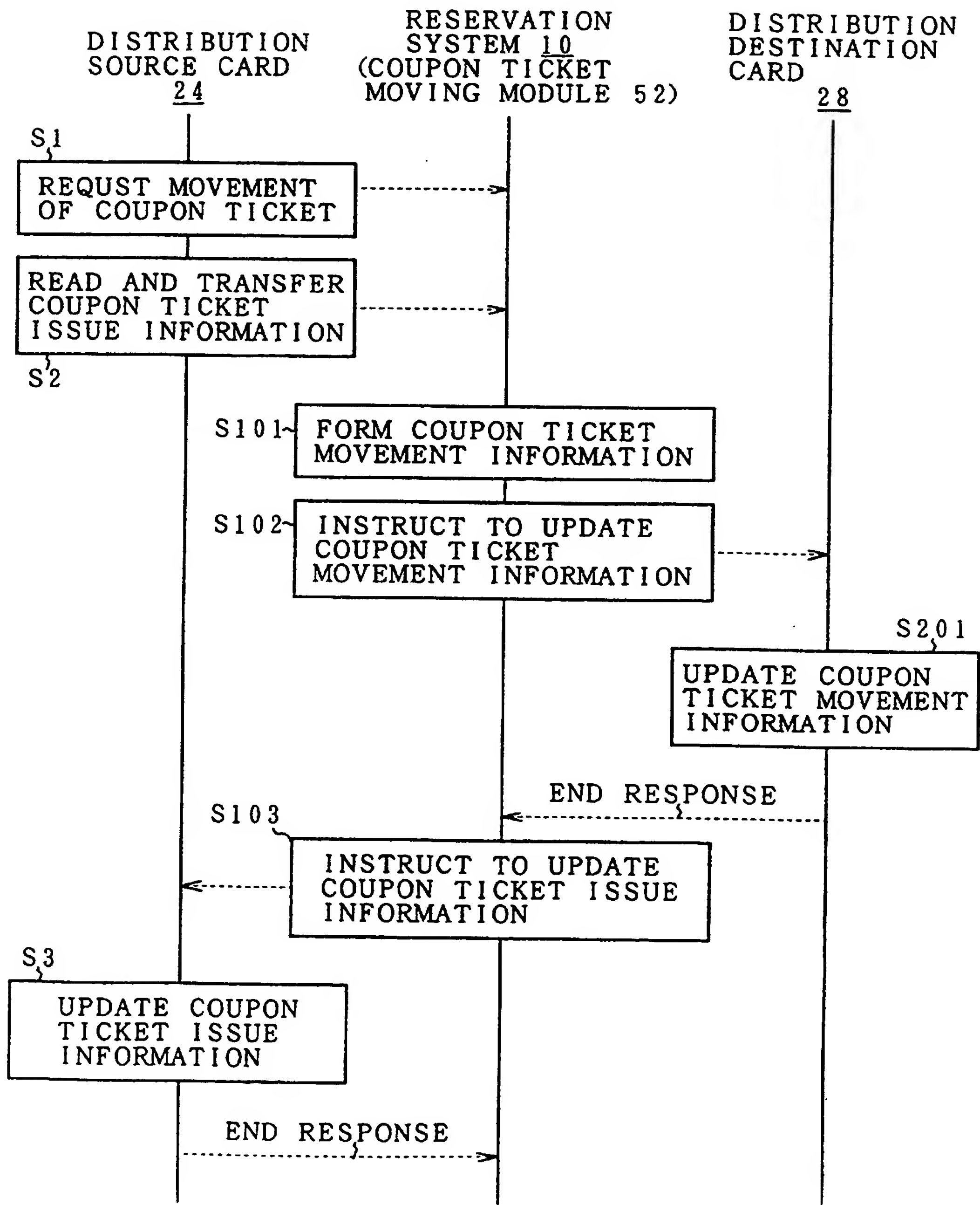


FIG. 20

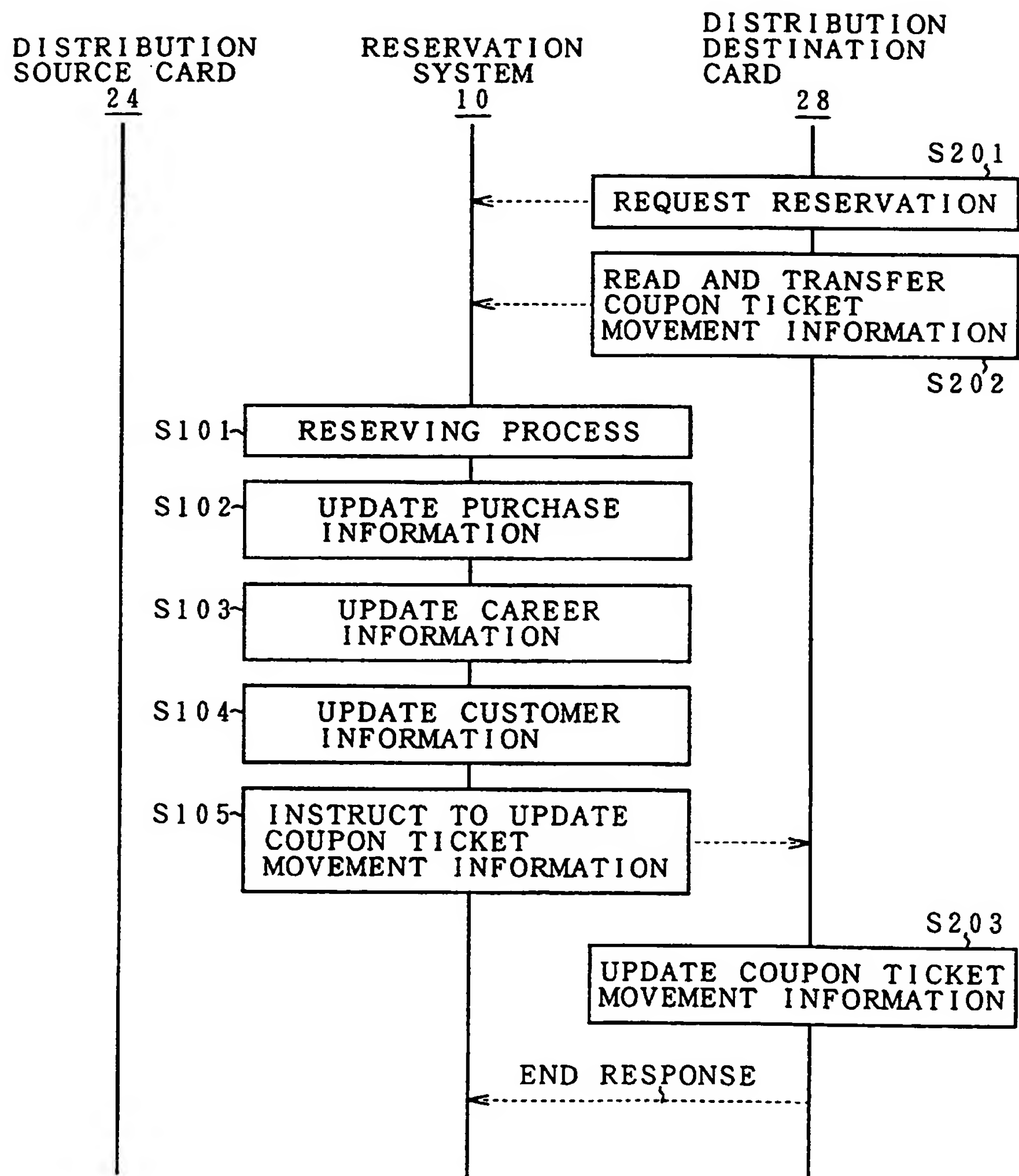


FIG. 21

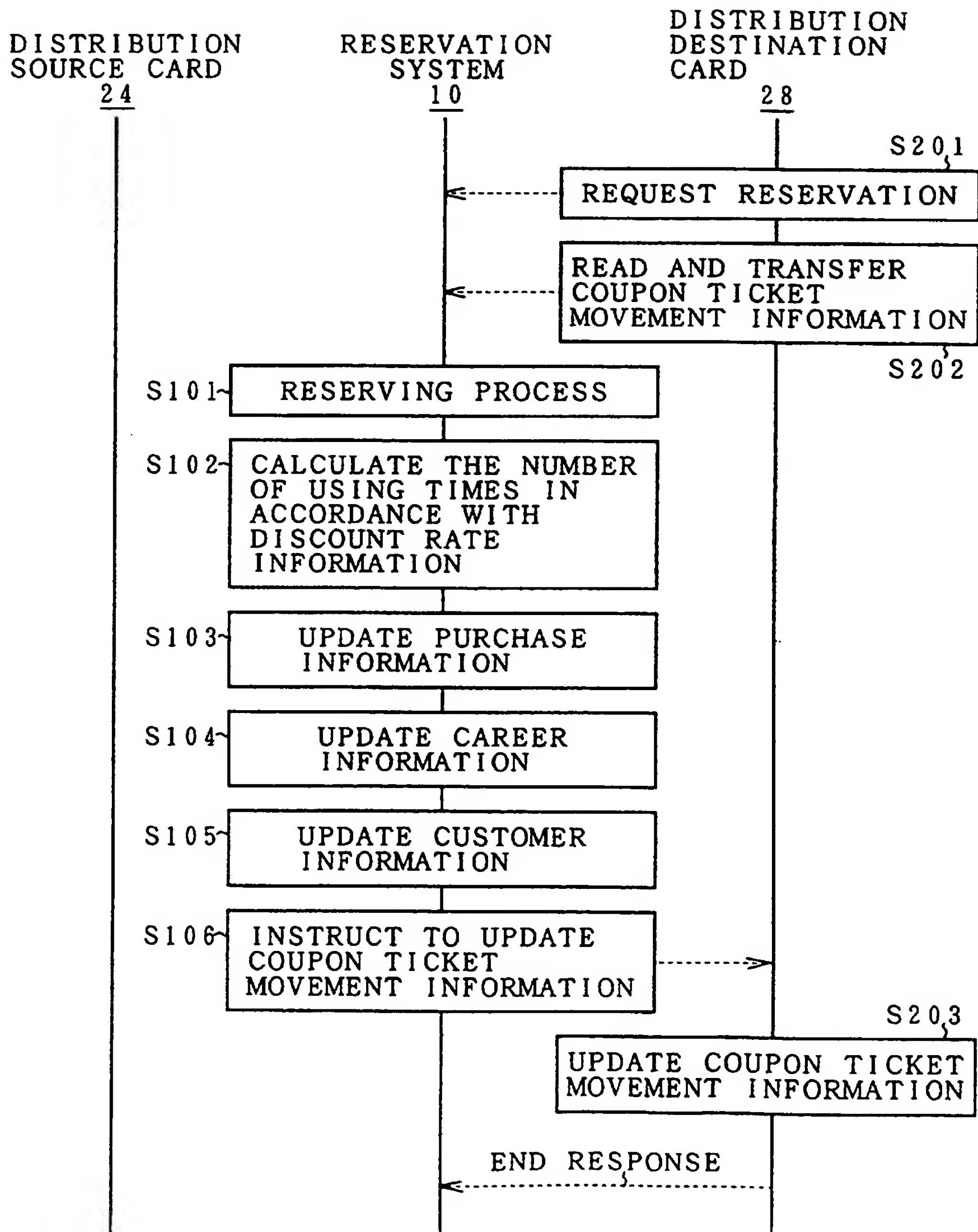


FIG. 22

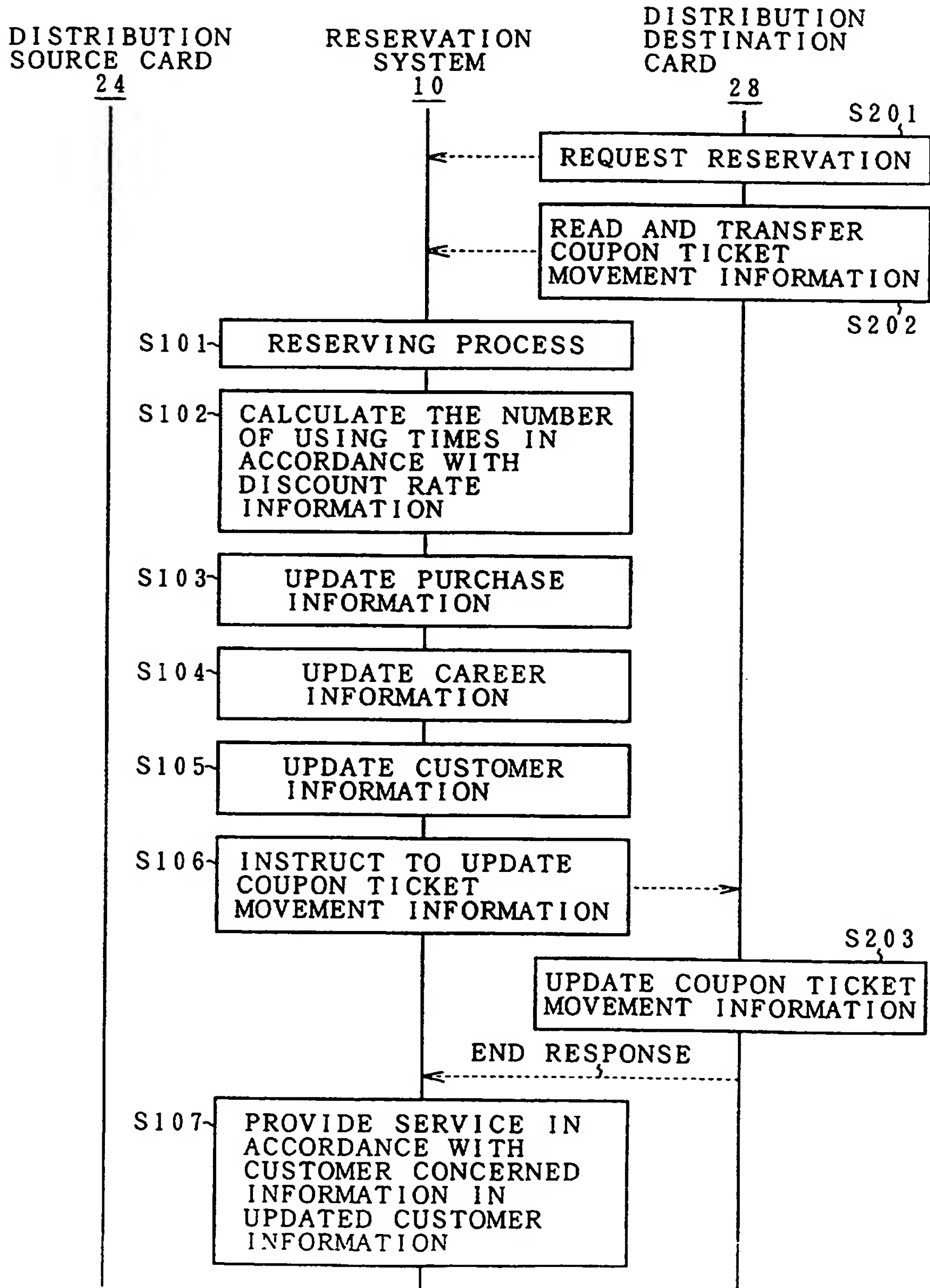


FIG. 23

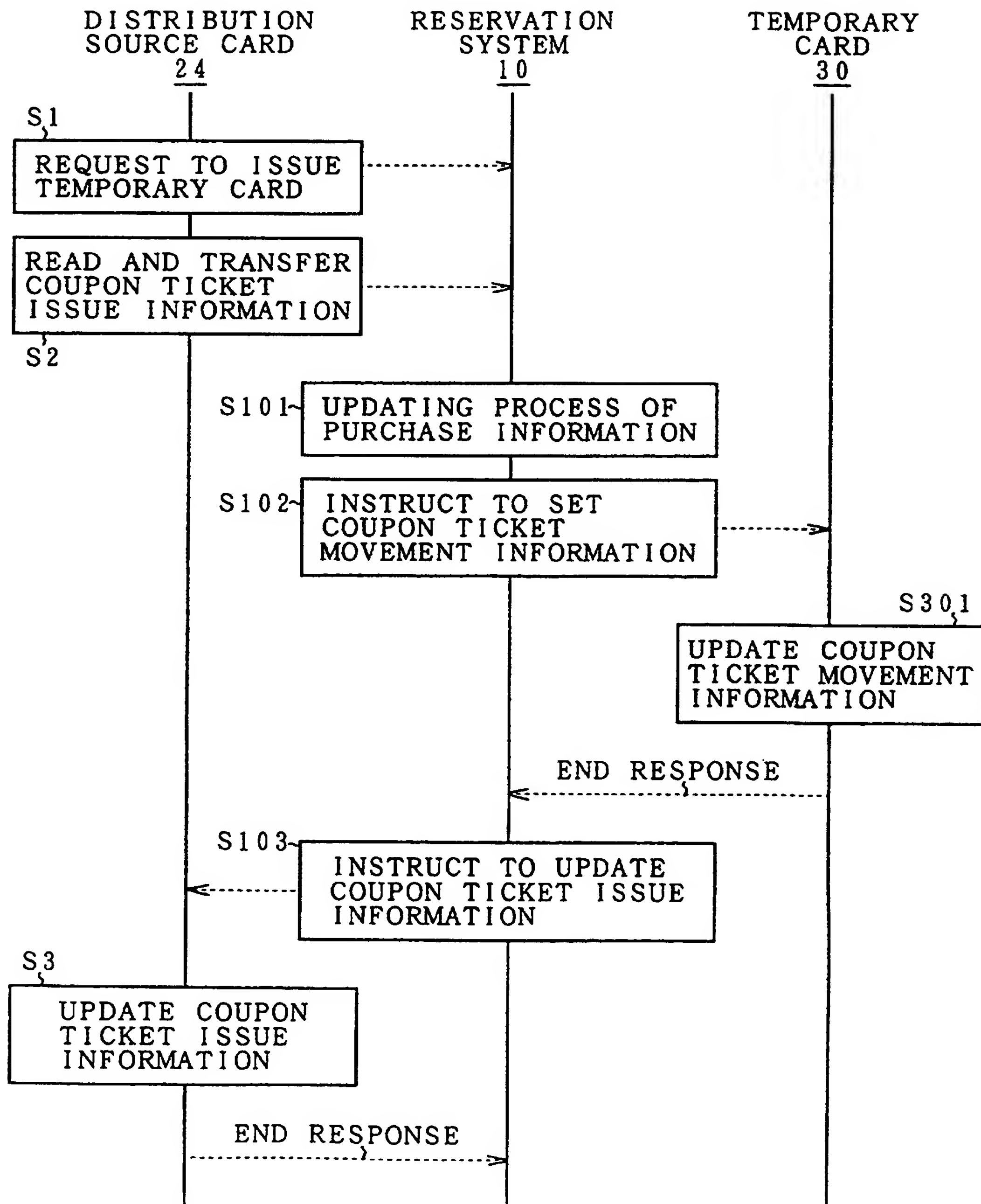


FIG. 24

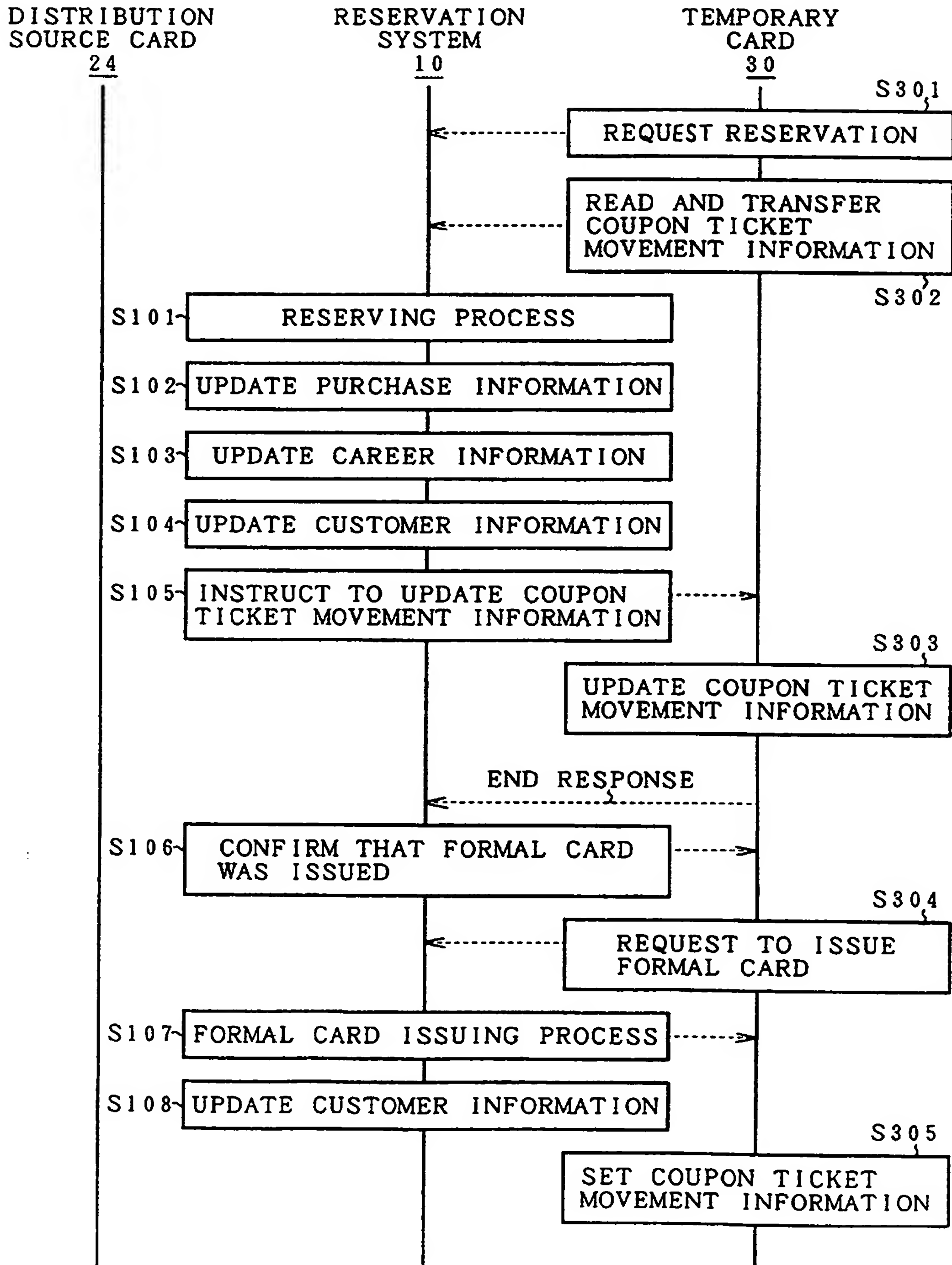


FIG. 25

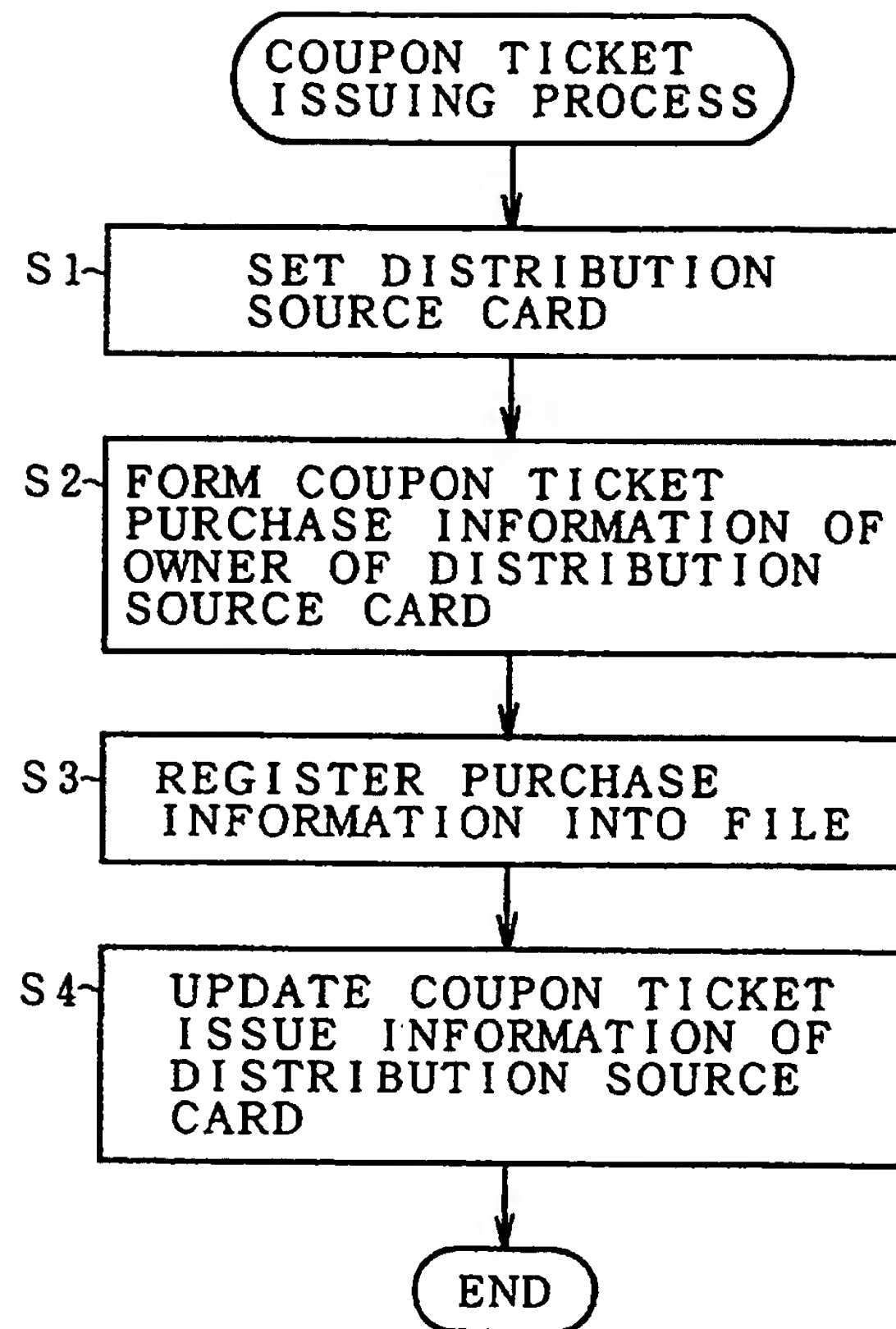


FIG. 26

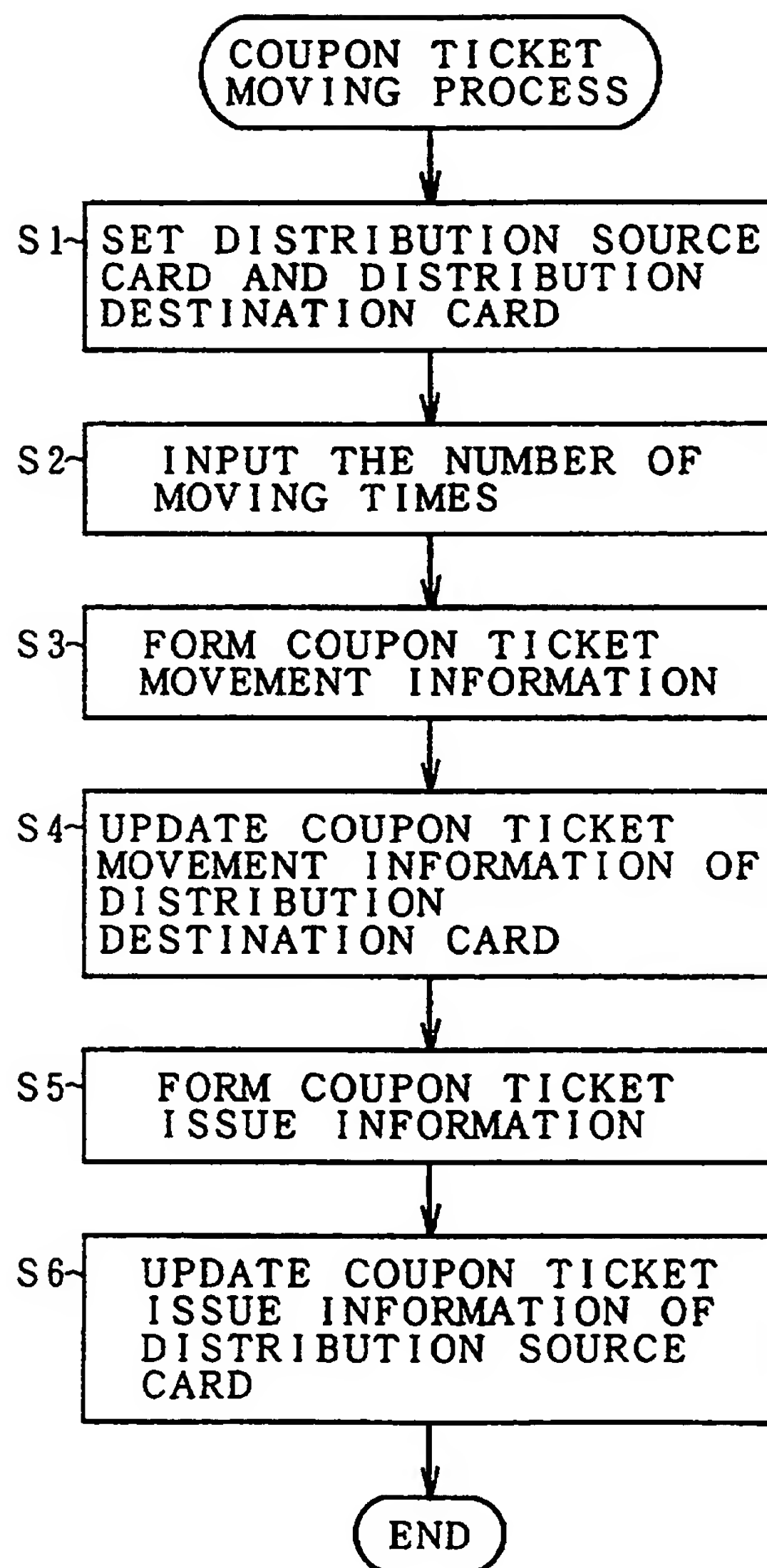


FIG. 27

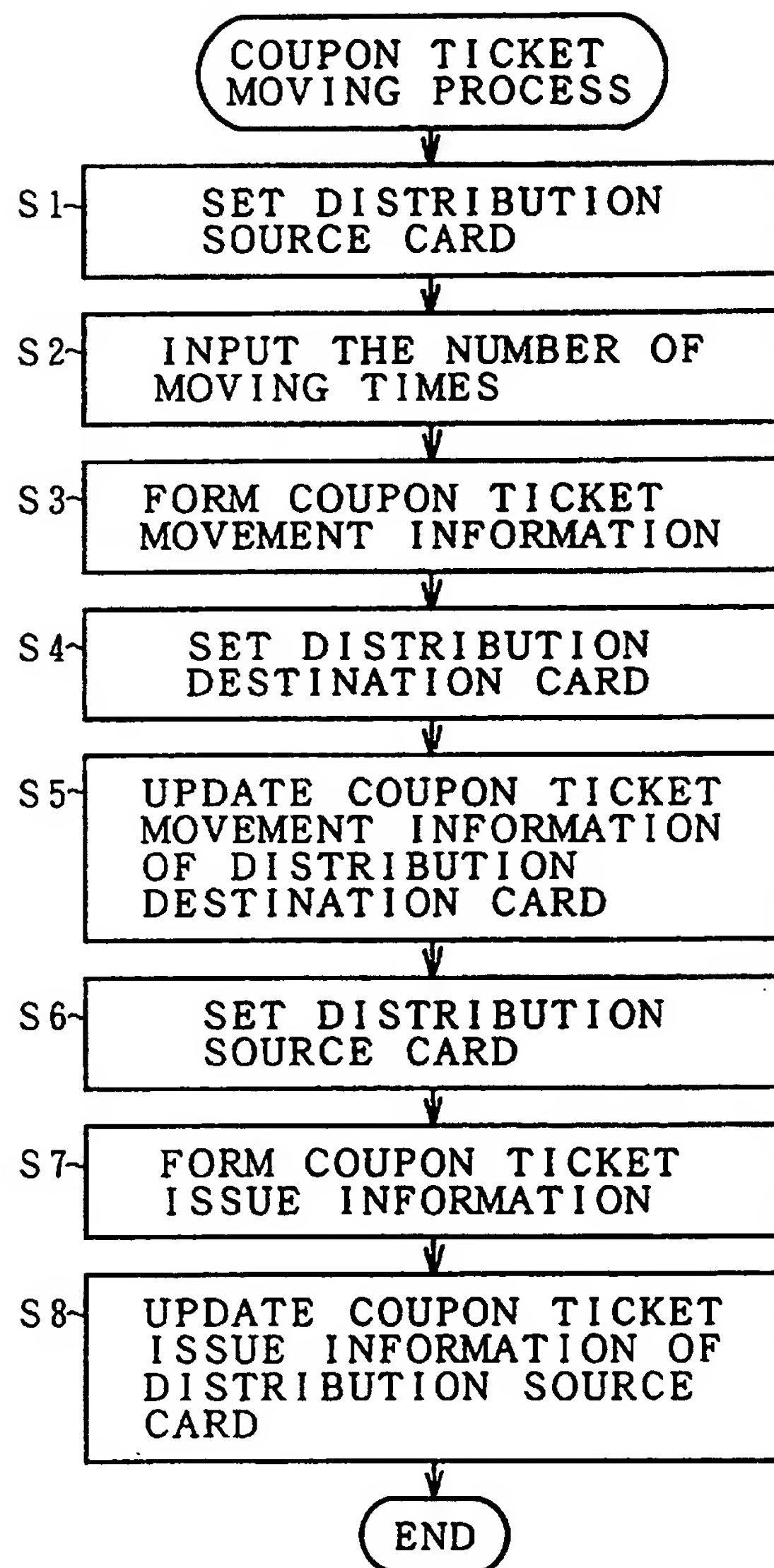


FIG. 28

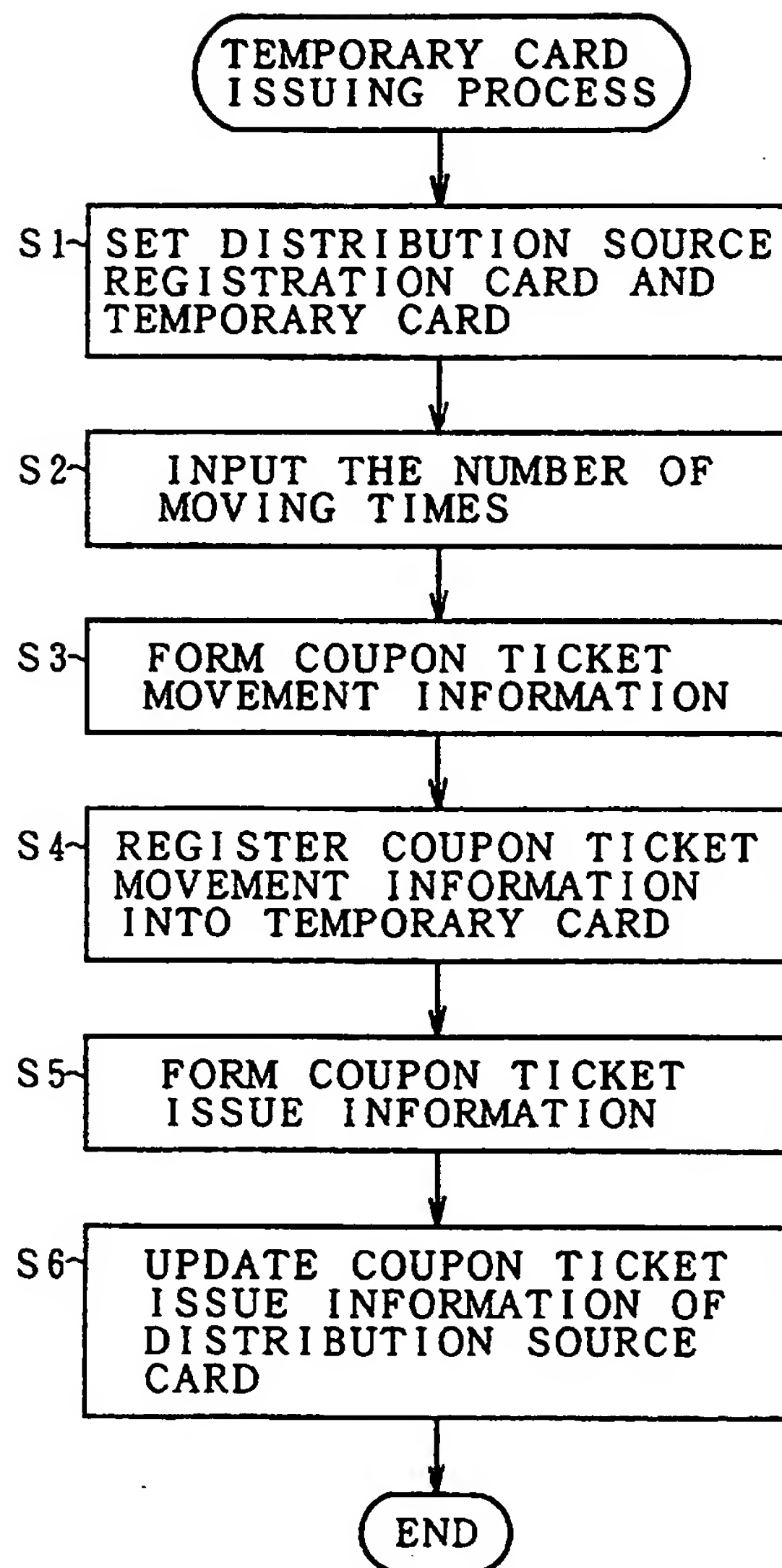
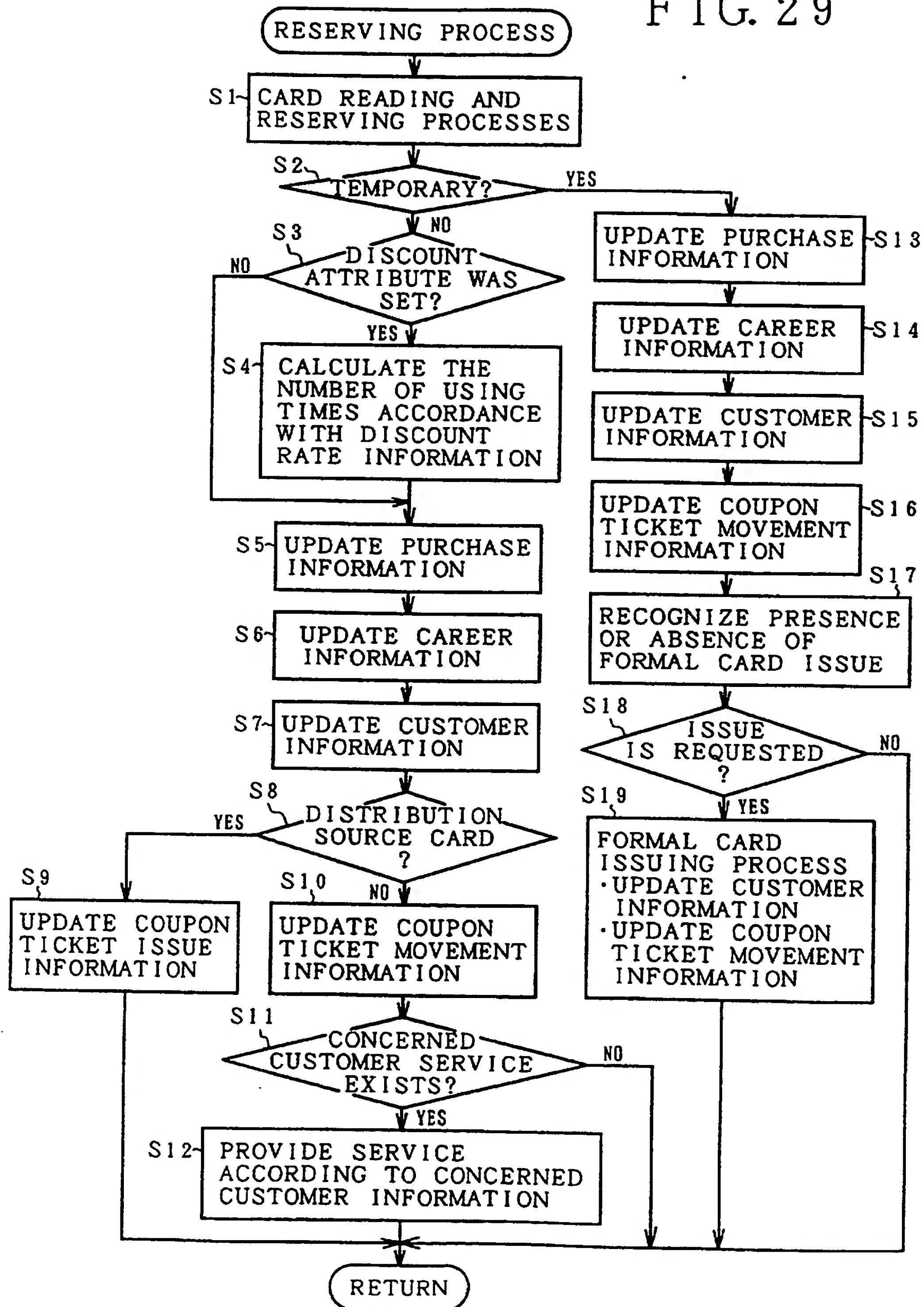


FIG. 29



Ticketless system and processing method and
memory medium storing its processing program

5

The invention relates to a ticketless system and
processing method for recording a boarding coupon
ticket of an airline or the like on an IC card, and for
performing reservation, ticket issuing, check-in,
10 boarding, and the like. The invention also relates to
a memory medium storing a processing program for the
ticketless system. More particularly, the invention
relates to a ticketless system, processing method and
program whereby a coupon ticket purchased with an IC
15 card can be distributed so as to enable a plurality of
persons to use it.

In recent years, IC cards have been standardized
by banks for use in withdrawing money from a terminal
device such as an ATM, DC, or window device. To enable
20 wider use of IC cards and to increase their value to
customers, they may be provided with storage/processing
ability greater than that required for bank use
according to a bank standard format.

Consequently, by utilizing an existing IC

card and by using a computer network and terminal devices of an on-line host system of the bank regarding the IC card, a ticketless process in a system of, for example, an airline, a train, a ship, or the like can
5 be realized. In this case, in a service offering enterprise such as airline company, travel agency, ticket company, or the like, since a POS system for selling a ticket by subscription has already been constructed, a ticketless system to reserve by using
10 the IC card can be relatively easily constructed by providing a function as a reader/writer of the IC card for a terminal of the POS system. In a traffic system for performing a passenger transportation, a coupon ticket in which a use interval and the number of using
15 times have been predetermined is issued to serve a convenience of a customer who often uses the system, so that the user can get a discount service of a fare by purchasing the coupon ticket.

However, in the ticketless system of the airline
20 ticket using the IC card, when the coupon ticket is purchased by the IC card and is used by a plurality of persons, since the coupon ticket is issued on the assumption that the holder himself of a ticket (hereinafter, the holder of a ticket is simply referred
25 to as a "holder") who purchased the coupon ticket uses it, there is an inconvenience that the coupon ticket purchased by the IC card as a medium can be used by

only the holder himself. This is because, inherently,
the coupon ticket of the airline is issued on the
assumption that the same person uses the ticket a
plurality of number of times in a form such that ten
5 serial boarding tickets with a cover on which the name
of the user himself is shown are issued, and that when
using the coupon ticket, the user has an obligation to
show the cover indicating the holder. Therefore, when
the coupon ticket which has been issued as a ticket is
10 issued as it is by using the IC card as a medium, the
holder of the IC card is the holder of the name shown
on the cover of the coupon ticket, and since the user
is obliged to show the name of the holder, there is a
problem such that the coupon ticket of the IC card can
15 be used by only the holder himself. Generally,
however, the coupon ticket is effectively used by an
enterprise or the like which often uses the ticket.
There are many cases where the coupon ticket is
purchased by using a name of, for example, a specific
20 person of the enterprise and when actually using, the
coupon ticket is distributed to users in the enterprise
and boarding tickets are reserved and purchased.
Therefore, the ticketless coupon ticket by the IC card
cannot be distributed to other persons, an efficient
25 use of the coupon ticket using the IC card cannot be
expected, and it is apprehended that the above facts
become obstacles when the ticketless system is

operated.

According to the invention, there are provided a
5 ticketless system and processing method whereby a
coupon ticket of an airline or the like issued by an IC
card as a medium can be used by a plurality of persons
and a memory medium in which a processing program for
the ticketless system has been stored.

10 The invention relates to a ticketless system in
which a passenger traffic facility such as an airline
or the like is used by using information stored in a
card in which a processor and a memory are installed,
namely, what is called an IC card. The ticketless
15 system has: a coupon ticket issuing module for
recording coupon ticket issue information for enabling
a distribution source card serving as a distribution
source of the coupon ticket to be used a plurality of
number of times onto such a card; a coupon ticket
20 moving module for recording coupon ticket movement
information for moving (a part or all of) the coupon
ticket of the distribution source card to a
distribution destination card and enabling the ticket
to be used; and a use processing module for processing
25 uses such as reservation, ticket issue, check-in,
boarding, and the like on the basis of the coupon
ticket issue information of the distribution source

card or coupon ticket movement information of the
distribution destination card. Consequently, the
coupon ticket can be purchased by the IC card and can
be moved to a card owned by another person and is used
5 as necessary, and the issue and use of the coupon
ticket using the card can be realized in the ticketless
system. Each of the distribution source card in which
the coupon ticket issue information has been stored and
the distribution destination card in which the coupon
10 ticket movement information has been stored is a
registration card which has previously been registered
in the system by the personal name of the user.

A temporary card issuing module for issuing a
temporary card in which the name of the user is not
15 registered in the system and which is temporarily used
is further provided. As coupon ticket issue
information of the distribution source card, ID
information of the card holder corresponding to a cover
of the coupon ticket, a use range such as an interval
20 or the like, the number of serial coupon tickets, the
number of using times, the number of times of
distribution, the number of remaining using times,
personal information such as an age or the like, a card
attribute (card kind), purchase year/month/day, a
25 purchase location, and the like are recorded. As
coupon ticket movement information of the distribution
destination card, holder ID information of the

distribution source card corresponding to the cover of the coupon ticket, a use range such as an interval or the like, the number of times of distribution, the number of using times, the number of remaining using times, individual information such as an age or the like, a card attribute, purchase year/month/day, a purchase location, and the like are recorded. Further, as coupon ticket movement information of the temporary card, the holder ID information of the distribution source card corresponding to the cover of the coupon ticket, a use range such as an interval or the like, the number of times of distribution, the number of using times, the number of remaining using times, individual information such as an age or the like, a card attribute, purchase year/month/day, a purchase location, and the like are recorded.

Further, the ticketless system of the invention has: a purchase information file for recording an issuing situation of the coupon ticket and managing; a career information file for recording a use situation of the coupon ticket which has already been issued and managing; a customer information file for recording individual information regarding the user of the coupon ticket which has already been issued and managing; and a discount rate information file for recording a discount rate to be used for conversion of the number of using times and managing. The purchase information

file records and manages a processing division such as purchase of the coupon ticket, movement, or temporary use, use contents such as an interval and the like, a class, the number of serial coupon tickets, the number
5 of moving times, a movement destination, processing year/month/day, a term of validity, settlement information, the number of issuing temporary cards, and the like. The career information file records and manages use year/month/day, the name of the user, the
10 number of using times, and the number of remaining using times. The customer information file records and manages a customer ID, the name of the user, an address, concerned customer information, a customer kind, and a card kind. Further, the discount rate
15 information file records and manages a discount rate which has been predetermined in accordance with an age, a time zone, or the like. When the use such as reservation, ticket issue, check-in, boarding, or the like based on the distribution source card,
20 distribution destination card, or temporary card is processed, the use processing module provides a predetermined service such as a mileage or the like to the holder of the distribution source card with reference to the customer information file. When the
25 user is the holder of the distribution destination card which received the distribution of the coupon ticket, the use processing module forms information indicative

of a new customer and notifies the service providing side of a fact that he is the new customer at the time of the use such as check-in at an airport counter, boarding, or the like. That is, in many cases, the card holder serving as a distribution source of the coupon ticket is an excellent customer. A possibility such that the user of the distribution destination card which received the distribution of the coupon ticket from the excellent customer is also inevitably an excellent customer is high. A gate staff, a steward, and the like make a greeting or the like to the customer who was notified as a new customer and who used the distribution destination card, thereby enabling the getting of the new excellent customer to be efficiently realized. The use processing module obtains a corresponding discount rate with reference to the discount rate information file upon reservation, calculates the number of using times from the discount rate, and updates the number of remaining using times of the career information file. As discount kinds, there are a discount for a child, a discount for a senior, a discount for the use in the early morning, and the like, so that it is possible to further complete the services issued for the card as a target.

25 The use processing module confirms the presence or absence of the issue of a formal registration card registered in the system to the user of the temporary

card when performing the process such as reservation,
ticket issue, or the like by the temporary card and,
when receiving an issuing request, issues a formal
distribution destination card in which the coupon
5 ticket movement information of the temporary card has
been recorded. A possibility such that the user of the
temporary card which received the distribution of the
coupon ticket from the excellent customer as a
distribution source of the coupon ticket is also an
10 excellent customer is high. By offering the use of the
coupon ticket by the issue of the formal card at the
time of the reservation or check-in, it can be
efficiently realized to newly acquire an excellent
customer. The use processing module can also issue a
15 magnetic card or a ticket as a ticket which can be used
only once as necessary for the reservation by using the
distribution source card, distribution destination
card, or temporary card. Therefore, a function of the
existing ticket system is not damaged.

20 The coupon ticket moving module is provided for a
portable terminal apparatus of the user and a part of
the coupon ticket is moved from the distribution source
card to the distribution destination card on the user
side, so that the use by the distribution of the coupon
25 ticket can be performed in a manner similar to the case
where the coupon ticket is purchased by the ticket.
The coupon ticket issuing module, coupon ticket moving

module, and temporary card issuing module are provided for the counter terminal apparatus or automatic ticket issuing machine of the system, thereby executing the issue of the coupon ticket for the distribution source card, the movement of a part of the coupon ticket from the distribution source card to the distribution destination card, and further, the issue of the temporary card to which a part of the coupon ticket was moved from the distribution source card. The coupon ticket which is handled in the ticketless system of the invention is a boarding coupon ticket of an airline. In addition to this ticket, however, coupon tickets to use proper means of transportation or facilities are also incorporated.

According to the invention, there is provided a ticketless processing method of reserving the use of a passenger traffic facility such as an airline or the like by using information stored in a card in which a processor and a memory are installed. The ticketless processing method comprises the following steps:

a coupon ticket issuing step of recording coupon ticket issue information for enabling the use of a plurality of number of times to a distribution source card serving as a distribution source of the coupon ticket;

a coupon ticket moving step of recording coupon ticket movement information for moving the coupon

ticket of the distribution source card to another distribution destination card, thereby enabling the ticket to be used; and

5 a use processing step of processing the use such as reservation, ticket issue, check-in, boarding, or the like on the basis of the coupon ticket issue information of the distribution source card or the coupon ticket movement information of the distribution destination card.

10 As each of the card in which the coupon ticket issue information is stored and the card in which the coupon ticket movement information is stored, a registration card which has previously been registered in the system by a personal name of the user is used.
15 Further, a temporary card issuing step of issuing a temporary card in which the user name is not registered in the system and which is temporarily used is provided. In this case, in the coupon ticket moving step, the coupon ticket movement information for moving
20 the coupon ticket of the distribution source card to the temporary card, thereby enabling the ticket to be used is recorded.

Further, according to the invention, there is provided a memory medium in which a processing program
25 of the ticketless system to use a passenger traffic facility such as an airline or the like by using information stored in a card in which a processor and a

memory are installed, what is called an IC card has been stored. The processing program in the memory medium has: a coupon ticket issuing module for recording coupon ticket issue information for enabling
5 the use of a plurality of number of times to the distribution source card serving as a distribution source of the coupon ticket; a coupon ticket moving module for recording coupon ticket movement information for moving (a part or all of) the coupon ticket of the
10 distribution source card to the distribution destination card, thereby enabling the ticket to be used; and a use processing module for processing the use such as reservation, ticket issue, check-in, boarding, or the like based on the basis of the coupon
15 ticket issue information of the distribution source card or the coupon ticket movement information of the distribution destination card. Each of the distribution source card in which the coupon ticket issue information is stored and the distribution
20 destination card in which the coupon ticket movement information is stored is a registration card which has previously been registered in the system by a personal name of the user. The processing program of the memory medium further has a temporary card issuing module for
25 issuing a temporary card in which the name of the user is not registered in the system and which is temporarily used. As a memory medium, a proper memory

medium such as optical disk, floppy disk, magnetic tape, semiconductor memory, or the like can be used.

Reference is made, by way of example, to the accompanying drawings illustrating one embodiment
5 of the invention, and in which:

Fig. 1 is a block diagram of a system environment ;
10

Figs. 2A to 2C are explanatory diagrams of IC cards which are used in the embodiment;

Fig. 3 is a block diagram of system functions ;

15 Fig. 4 is an explanatory diagram of a purchase information file;

Fig. 5 is an explanatory diagram of a career information file;

20 Fig. 6 is an explanatory diagram of a customer information file;

Fig. 7 is an explanatory diagram of a coupon ticket issue information file ;

Fig. 8 is an explanatory diagram of a coupon ticket movement information file ;

25 Fig. 9 is an explanatory diagram of a discount rate information file;

Fig. 10 is an explanatory diagram of a

distribution source card and coupon ticket issue information;

Fig. 11 is an explanatory diagram of a distribution destination card and coupon ticket movement information;

Fig. 12 is an explanatory diagram of a temporary card and the coupon ticket movement information;

Fig. 13 is an explanatory diagram of a distributing process of a coupon ticket of the invention using a portable terminal;

Fig. 14 is an explanatory diagram of an issue and a distribution of the coupon ticket using an automatic ticket issuing machine;

Fig. 15 is a time chart for a coupon ticket issuing process for the distribution source card;

Fig. 16 is a time chart for a reserving process using the distribution source card;

Fig. 17 is a time chart for a reserving process accompanying with a discount in accordance with the number of using times using the distribution source card;

Fig. 18 is a time chart for a reserving process accompanying with a customer service using the distribution source card;

Fig. 19 is a time chart for a coupon ticket moving process from the distribution source card to the

distribution destination card;

Fig. 20 is a time chart for a reserving process using the distribution destination card;

Fig. 21 is a time chart for a reserving process
5 accompanying with the discount in accordance with the number of using times using the distribution destination card;

Fig. 22 is a time chart for a reserving process accompanying with a customer service using the
10 distribution destination card;

Fig. 23 is a time chart for a coupon ticket moving process for the temporary card;

Fig. 24 is a time chart for a reserving process using the temporary card;

Fig. 25 is a flowchart for a coupon ticket issuing
15 process;

Fig. 26 is a flowchart for a coupon ticket moving process;

Fig. 27 is a flowchart for another coupon ticket
20 moving process;

Fig. 28 is a flowchart for a temporary card issuing process; and

Fig. 29 is a flowchart for the reserving process .

25

Fig. 1 shows a system construction of a ticketless

system embodying the invention and relates to an example of a reservation system for airlines.

A reservation system 10 has an airline company host computer 12, a travel agency host computer 14, and further, a ticket company host computer 16. Those computers are connected by a network 18. Counter terminal apparatuses 20-1 to 20-n and automatic ticket issuing machines 22-1 to 22-n which are used in the airline company, travel agency, and ticket company are connected to the network 18. The counter terminal apparatuses 20-1 to 20-n are used for counter works such as reservation and ticket issue of a coupon ticket, check-in, and the like. The automatic ticket issuing machines 22-1 to 22-n are used for an automation of the check-in at an airport counter or a boarding gate in addition to the reservation and ticket issue. A providing side of the system comprising the airline company, travel agency, and ticket company which construct the reservation system 10 receives a request from the user and issues an IC card to be used for a ticketless reservation. The IC card that is issued by a service providing enterprise is used as a ticketless card of an airline coupon ticket which is issued by the airline company. Specifically speaking, a user 32 visits the airline company, travel agency, or ticket company constructing the reservation system 10 and makes an application to register the IC card, so

that an IC card which can be used as an airline coupon
ticket by using the counter terminal apparatuses 20-1
to 20-n is issued to the user 32. The IC card is
issued simultaneously with the application to purchase
5 the airline coupon ticket for the airline company by
the user 32. Use information as an airline coupon
ticket is recorded on a distribution source card 24
which is issued to the user 32. The user 32 who
received an offer of the distribution source card 24 as
10 an airline coupon ticket sets the distribution source
card 24 into the counter terminal apparatuses 20-1 to
20-n or automatic ticket issuing machines 22-1 to 22-n,
so that all processes such as boarding reservation,
ticket issue, check-in at the airport, and passage at
15 the boarding gate according to a use range of the
coupon ticket, namely, an interval, the number of
serial tickets, a seat class, and the like can be
executed in a ticketless manner. According to the
system of the invention, further, the user 32 who
20 received the offer of the distribution source card 24
in which the use information of the airplane coupon
ticket has been stored can move a part or all of the
coupon tickets of the distribution source card 24 to
another IC card registered in the reservation system
25 10, namely, a distribution destination card 28 owned by
another user 34. The movement of the part of the
airline coupon tickets of the distribution source card

24 to the distribution destination card 28 can be performed by using an application module as coupon ticket moving software installed in a portable terminal apparatus 26 owned by the user in addition to the counter terminal apparatuses 20-1 to 20-n and automatic ticket issuing machines 22-1 to 22-n provided for the reservation system 10. The distribution source card 24 held by the user 32 who purchased the airline coupon ticket first and the distribution destination card 28 to which the airline coupon ticket of the distribution source card 24 was moved are registration cards which have previously been registered in the reservation system 10. As another means, the airline coupon ticket of the distribution source card 24 can be also moved to a temporary card 30 which is temporarily issued to a user 36 by the reservation system 10. Since the temporary card 30 and the coupon ticket need to be simultaneously issued, the movement of the airline coupon ticket to the temporary card 30 is performed by using the counter terminal apparatuses 20-1 to 20-n provided for the reservation system 10. As distribution source card 24, distribution destination card 28, and further, temporary card 30 which are used as airline coupon tickets in the reservation system 10 of the invention, for example, IC cards standardized by the bank are used.

Fig. 2A shows an IC card which is used in the

system of the invention. An IC card 38 is a card medium for an information process and an information storage standardized by the bank and at least a processor and a memory are built therein. By setting
5 the IC card 38 into an ATM, a CD, or the like which serves as an input/output terminal and is provided for a bank computer system, the IC card receives a power supply by a connection between a terminal provided for the card itself and a terminal unit, simultaneously
10 couples a transmission path, and can execute an ordinary bank transaction such as payment, withdrawal, deposit, transfer, or the like. As for a memory region, the IC card 38 has not only a bank standard format region 40 for a bank use but also a lending
15 region 42 which can be used by the third person. At least an account number 44 has been recorded in the bank standard format region 40 and the other contents are based on a predetermined bank standard format. In the ticketless system of the invention, a coupon ticket
20 information region 46 is allocated to the lending region 42 of the IC card 38 and is used. As information in the bank standard format region 40 which is necessary to use the coupon ticket information region 46, it is sufficient to have the account number
25 44. Therefore, the account number 44 of the IC card 38 can be also used as a holder ID indicative of the name of the card owner in the system.

Fig. 2B shows a specific example of the IC card 38 which is used in the invention, namely, the IC card 38 with a display. The IC card 38 has: a magnetic stripe portion 300 of, for example, the JIS-II type which is
5 used when a credit or the like is used; a display portion 302 in which the coupon ticket information can be switchingly displayed; a ten-key portion 304 for inputting a personal identification code to confirm the person himself; an account number portion 306; a
10 customer number portion 308 corresponding to seven digits; and an ID card portion 312. Further, a name (signature), a photograph, and the like of the owner are provided on the rear surface of the card in correspondence to, for example, JIS-I.

15 Fig. 2C shows another specific example of the IC card 38 which is used in the invention. As compared with Fig. 2B, the IC card 38 with no display is used. The IC card 38 has the magnetic stripe portion 300, ten-key portion 304, account number portion 306,
20 customer number portion 308, a photograph portion 310, and IC card portion 312. The name (signature) of the owner is provided on the rear surface of the card in correspondence to, for example, JIS-I.

Fig. 3 is a functional block diagram of the
25 ticketless system of the invention. In the reservation system 10, as program modules for providing a ticketless service of the airline coupon ticket using

the IC card, a use processing module 48, a coupon
ticket issuing module 50, a coupon ticket moving module
52, and a temporary card issuing module 54 are
prepared. For the purpose of an information management
5 of a ticketless reservation service of the coupon
ticket using the IC card, a purchase information file
56, a career information file 58, a customer
information file 60, a coupon ticket issue information
file 61, a coupon ticket movement information file 62,
10 and further, a discount rate information file 63 are
provided as a database for the reservation system 10.
The coupon ticket issuing module 50 of the reservation
system 10 receives an application to purchase the
coupon ticket from the user and records coupon ticket
15 issue information 64 onto the distribution source card
24 as a registration card owned by the application
user. Thus, the user can purchase the airline coupon
ticket from the reservation system 10. By using the
coupon ticket issue information 64 of the distribution
20 source card 24 recorded by the purchase of the airline
coupon ticket, all of the boarding ticket reservation
using the coupon ticket, ticket issue and check-in at
an airport counter, and passage at the boarding gate
can be performed for the reservation system 10 in a
25 ticketless manner. The coupon ticket moving module 52
of the system performs a process for moving the coupon
ticket issued for the distribution source card 24 to

the distribution destination card 28 as another registration card. As for the movement of the coupon ticket in this case, the purchased coupon ticket in the coupon ticket issue information 64 recorded in the distribution source card 24 is recorded as coupon ticket movement information 66 onto the distribution destination card 28. With respect to the distribution destination card 28 which received the movement of the coupon ticket as well, in a manner similar to the distribution source card 24, all of the reservation of a boarding ticket, ticket issue and check-in at an airport counter, and passage at the boarding gate can be performed in a ticketless manner by the use processing module 48 of the reservation system 10. The temporary card issuing module 54 provided for the reservation system 10 moves the coupon ticket from the distribution source card 24 to the temporary card 30 as a target, which is not registered in the reservation system 10 and is temporarily used. Coupon ticket movement information 68 which is formed by moving the coupon ticket to the temporary card 30 is substantially the same as the coupon ticket movement information 66 in the distribution destination card 28 using the registration card and information indicative of the card attribute, namely, the card kind shows a temporary card. Further, in the reservation system 10, by the process of the use processing module 48 using the

distribution source card 24, distribution destination card 28, or temporary card 30, a magnetic card 70 which can be used as a boarding ticket or a ticket 72 which is ordinarily outputted as a paper can be also issued
5 for the boarding reservation using the coupon ticket.

Recording and management contents of the purchase information file 56, career information file 58, customer information file 60, coupon ticket issue information file 61, coupon ticket movement information
10 file 62, and discount rate information file 63 provided for the reservation system 10 will now be described. Fig. 4 is an explanatory diagram of the purchase information file. The purchase information of the user issued to the IC card is recorded and managed in the
15 system. That is, in the purchase information file 56, a processing division 74, an interval 76, a class 78, the number of serial coupon tickets 80, the number of times of distribution 82, processing year/month/day 84, a term of validity 85 by the year/month/day or the
20 number of months, settlement information 86, distribution destination information 88, and further, the number of issuing temporary cards 90 are recorded and managed. In the processing division 74, a purchase of the coupon ticket by the distribution source card 24
25 in Fig. 3, a distribution to move the coupon ticket to the distribution destination card 28, and further, a temporary distribution due to the issue of the

temporary card 30 are recorded. The subsequent interval 76 and class 78 show information of the use range of the coupon ticket. In this example, it indicates a business class between "Tokyo - Osaka". In
5 this instance, since the distribution and temporary distribution in the processing division 74 are the same with respect to the interval 76 and class 78, they are not recorded in particular. Even if they are recorded, there will be no problem. The number of serial coupon
10 tickets 80 indicates the number of using times of the coupon ticket purchased. In this example, it indicates 10 times. The number of times of distribution 82 is recorded with respect to each of the distribution and the temporary distribution in the processing division
15 74. The information indicating that the number of using times is equal to 3 times with respect to the distribution is recorded and information indicating that the number of using times is equal to 2 times with respect to the temporary distribution is recorded. In
20 the processing year/month/day 84, the year/month/day when the purchase, distribution, or temporary distribution was performed are recorded, respectively. In the settlement information 86, information indicating that a settlement at the time of the
25 purchase of the coupon ticket was performed by, for example, cash is recorded. In the distribution destination information 88, with respect to

"distribution" which means the coupon ticket movement in the processing division 74 for the registration card as a target, a customer ID = B indicative of the card on the distribution destination side and the holder is recorded. In the number of issuing temporary cards 90 as a final item, the number of temporary cards issued by "temporary distribution" in the processing division is recorded. By seeing such contents in the purchase information file 56, situations of the purchase of the airline coupon ticket for the IC card owned by the card holder decided by an IC code 75, the distribution by the movement to the other registration card, and further, the temporary distribution using the temporary card can be managed in a lump.

Fig. 5 is an explanatory diagram of the career information file 58 in Fig. 3. The career information file 58 is managed by recording use situation of the issued coupon ticket. Namely, in a manner similar to the purchase information file 56 in Fig. 4 of the career information file 58, the ID code 75 indicative of the holder of the distribution source card 24 who purchased the coupon ticket first in Fig. 3 is used as an index and a use year/month/day 92, a user 94, the number of using times 96, a discount kind 98, and the number of remaining using times 100 are recorded, thereby managing. In the career information file 58, the distribution destination card 28 or temporary card

30 serving as a movement destination of the coupon
ticket is not recorded but how the coupon ticket of the
distribution source card 24 serving as a purchase
destination is used is recorded. When seeing the use
5 contents of the career information file 58, it will be
understood that the user 94 also has distributed the
coupon ticket to persons B and C other than a person
himself A designated by the ID code 75. Among them,
with respect to the person himself A, for example, an
10 "early morning discount" in which a departure time is
before seven o'clock is received as a discount kind 98.
Therefore, by applying a discount rate of the "early
morning discount", which will be obviously explained
hereinlater, the number of using times 96 is set to
15 0.65 time, so that the number of remaining using times
is changed from 8 times to 7.35 times. Further, in the
user B of the user 94, the discount kind 98 is set to
"senior" for elderly persons as targets, so that the
number of using times 96 is equal to 0.75 time and the
20 number of remaining using times 100 is equal to 6.6
times. From the career information file 58, it will be
understood that in addition to the holder himself A,
the users B and C possess the same coupon ticket. The
number of remaining using times 100 based on the number
25 of using times in which the user B other than the
person himself A received the discount is not recorded
to the number of remaining using times of the

distribution destination card 28 which the user B other than the person himself possesses but is all recorded to the number of remaining using times in the distribution source card 24 of the holder himself A.

5 Fig. 6 is an explanatory diagram of the customer information file 60 provided for the reservation system 10 in Fig. 3. The customer information file 60 records the individual information regarding the user of the issued coupon ticket. Namely, the ID code 75 of the
10 holder A of the distribution source card 24 who purchased the coupon ticket of the customer information file 60 is used as an index and the file is managed. A customer ID 102, a name 104, an address 106, a telephone number 108, a use rate 110, a concerned
15 customer ID 112, individual information 114, and a card kind 116 are recorded and managed. In the customer ID 102, ID = A denotes the holder himself who possesses the distribution source card 24 of the coupon ticket, the customer ID = B denotes another holder who
20 possesses the distribution destination card 28 which received the movement of the coupon ticket, and further, the customer ID = C denotes the user who possesses the temporary card which received the movement of the coupon ticket. From this relation, as
25 for the user of the customer ID = A as a holder himself of the coupon ticket, the customers ID = B, C are recorded as a concerned customer ID 112. On the other

hand, with regard to the concerned customer ID 112 of the customers ID = B, C which received the movement of the coupon ticket, the customer ID = A serving as a movement source is recorded. The individual
5 information 114 is personal information about the coupon ticket discount of the user registered. As for the customer ID = A as a holder himself of the coupon ticket, "early morning" is applied. As for the customer ID = B who received the movement of the coupon
10 ticket, since he is a person of an advanced age, "senior" is applied. Further, with respect to the customer ID = C, "child" is applied. The card kind 116 as a last item is a kind of IC card issued by the system. As for the customers ID = A, B, they relate to
15 the registration cards registered in the system. As for the customer ID = C, he relates to the temporary card that is temporarily used. Further, as for the customer ID = D, he is a user in which the movement of the coupon ticket is scheduled from the customer ID = A
20 as a holder of the distribution source card 24. However, since none of the registration card and the temporary card is issued, there is only the name 104 and the other items are held in blank.

Fig. 7 is an explanatory diagram of the coupon
25 ticket issue information file 61 provided for the reservation system 10 in Fig. 3. In the coupon ticket issue information file 61, the ID code 75 indicative of

the owner of the distribution source card 24 who purchased the coupon ticket is used as an index and the present state about the issued coupon ticket is recorded and managed. That is, an interval 118, a class 120, the number of usable times (the number of remaining using times) 122, the number of times of distribution 124, and further, a distribution destination 126 are recorded. In the example, the number of usable times 122 of the present coupon ticket, namely, the number of remaining using times is equal to 5 times, the number of times of distribution 124 in which the coupon ticket was moved is equal to 3 times, and the distribution destination 126 is set to ID = B.

Fig. 8 shows the coupon ticket movement information file 62 provided for the reservation system 10 in Fig. 3. The coupon ticket information of the movement destination is recorded and managed in the coupon ticket movement information file 62. Namely, an ID code 125 indicative of the movement destination of the coupon ticket is used as an index and a distribution source 128, an interval 130, a class 132, the number of times 134 upon distribution, the number of using times 136, a card attribute 138, and use careers 140 to 144 are provided. ID = A as a holder of the distribution source card 24 who purchased the coupon ticket is recorded in the distribution source

128. The number of times 134 upon distribution is set by the movement of the coupon ticket and, in this case, the coupon tickets as many as three times have been moved. The number of using times 136 is the number of using times of the distribution destination card 28 by the movement information of the coupon ticket and is equal to one time. The card attribute 138 denotes the kind of IC card of the movement destination and is either one of the registration card and the temporary card. In this case, it is set to the registration card. For example, use year/month/day are recorded in the use careers 140 to 144. In this case, since the number of using times 136 is equal to one time, the use year/month/day are recorded in the use career 140.

Fig. 9 shows the discount rate information file 63 provided for the reservation system 10 in Fig. 3 and it is constructed by an attribute 146, a discount rate 148, and remarks 150. As an attribute 146, in this example, three kinds of "child", "early morning", and "senior" are recorded and a predetermined value is recorded as a discount rate 148 with respect to each of them. Conditions necessary for the attribute 146 are described in the remarks 150.

The coupon ticket issue information 64 and coupon ticket movement information 66 and 68 stored in each of the distribution source card 24, distribution destination card 28, and temporary card 30 which are

used as ticketless means by the reservation system 10
in Fig. 3 will now be described. Fig. 10 shows the
distribution source card 24 on which the coupon ticket
issue information 64 has been recorded by the purchase
5 of the coupon ticket. The coupon ticket issue
information 64 is recorded together with the ID code A
as an ID code 75 indicative of the holder of the
distribution source card 24. As coupon ticket issue
information 64, an interval 162, a class 164, the
10 number of serial coupon tickets 166, the number of
using times 168, the number of times of distribution
170, the number of remaining using times 172,
individual information 174, an attribute 176, purchase
year/month/day 178, a term of validity (year/month/day
15 or the number of months) 179, an issuing location 180,
and an issuing enterprise 182 are recorded. As for the
coupon ticket issue information 64 of the distribution
source card 24 as mentioned above, when the coupon
ticket is moved from the distribution source card 24 or
20 when the card is used for a reservation of the boarding
ticket, issue, check-in, passage at a boarding gate, or
the like, the necessary information contents are
updated by the system.

Fig. 11 shows the distribution destination card 28
25 in which the coupon ticket is moved and used and which
is used in the invention. As an ID code 125 indicative
of the holder as a card owner, the coupon ticket

movement information 66 is recorded together with ID =
B in the distribution destination card 28. ID = A of
the distribution source card 24 in Fig. 10 indicative
of a distribution source 192 is recorded in the head of
5 the coupon ticket movement information 66 of the
distribution destination card 28. ID = A indicative of
the distribution source 192 provides a function as a
front cover of the coupon ticket indicative of the
coupon ticket of the same holder when the coupon ticket
10 is purchased by the distribution source card 24 in Fig.
10. Namely, the coupon ticket is a kind of discount
ticket and the use by the person himself who purchased
is a principle rule. Therefore, when making a
reservation by using the coupon ticket, it is obliged
15 to confirm that the person who makes a reservation is
the person himself who purchased the coupon ticket.
However, the distribution destination card 28 receives
the movement of the coupon ticket from the distribution
source card 24 serving as the purchaser himself instead
20 of the coupon ticket of the purchaser himself. The
purchaser himself cannot be confirmed from ID = B of
the distribution destination card 28. Therefore, by
recording ID = A of the distribution source 192
indicative of the purchaser himself, the confirmation
25 of the purchaser himself upon using of the coupon
ticket, what is called, a front cover function of the
coupon ticket is realized. Subsequent to the

distribution source 192, in a manner similar to the case of the distribution source card 24 in Fig. 10, an interval 194, a class 196, the number of times of distribution 198, the number of using times 200, the number of remaining using times 202, individual information 204, an attribute 206, movement year/month/day 208, a term of validity (year/month/day or the number of months) 209, an issuing location 210, and an issuing enterprise 212 are recorded.

Fig. 12 shows the temporary card 30 that is used in the invention. ID = C is recorded in the temporary card 30 as an ID code 135 indicative of the user which was allocated when the temporary card 30 is issued. Further, the coupon ticket movement information 68 of the coupon ticket which was moved from the coupon ticket issue information 64 of the distribution source card 24 in Fig. 10 is recorded. The coupon ticket movement information 68 is also fundamentally similar to the distribution destination card 28 in Fig. 11. A distribution source 222, an interval 224, a class 226, the number of times of distribution 228, the number of using times 230, the number of remaining using times 232, individual information 234, an attribute 236, movement year/month/day 238, a term of validity (year/month/day or the number of months) 239, an issuing location 240, and an issuing enterprise 242 which function as a front cover of the coupon ticket

are recorded. The coupon ticket movement information 68 differs from the card 28 with respect to a point that the attribute 236 is "temporary".

In the reservation system 10 according to the invention of Fig. 3, the recording and management of the coupon ticket information in each of the distribution source card 24, distribution destination card 28, and temporary card 30 are executed by the recording management of each information file in Figs. 4 to 9. At the same time, by using the information regarding the users which is derived through the use of the coupon ticket, an access and an information formation for getting new customers who use the coupon tickets which are issued by the reservation system 10 can be dynamically executed. For example, the owner of the distribution source card 24 who purchases and uses the coupon ticket is an excellent customer when it is seen from a service enterprise which provides the reservation system 10. A possibility such that the owner of the distribution destination card 28 who received the distribution of the coupon ticket from the excellent customer and the owner of the temporary card 30 are also excellent customers is high. Therefore, when using the distribution destination card 28 or temporary card 30, a message indicating that they are the excellent customers but are not yet registered in the system is outputted to the operator or the like on

the reservation system 10 side. An explanation or guidance for a purchase of the coupon ticket is actively executed to the owner of the distribution destination card 28, thereby capturing such an owner as
5 a customer of the system. Or, a possession of a registration card of the reservation system 10 is recommended to the owner of the temporary card 30 or the like. In this way, the invention can be largely used for an activity to keep a new customer.

10 Fig. 13 is a functional block diagram of a moving process of a coupon ticket by a portable terminal apparatus which is shown in Fig. 1 and is owned by the user. A coupon ticket moving module 244 has been installed as software that enables the movement of the
15 coupon ticket in the system of the invention in the portable terminal apparatus 26 such as a personal computer or the like which the user possesses. Simultaneous with that the coupon ticket moving module 244 is installed, the portable terminal apparatus 26
20 has a reader/writer of the IC card as an input/output device. The distribution source card 24 which received the issue of the coupon ticket from the system is set into the portable terminal apparatus 26 in which such a coupon ticket moving module 244 has been installed.
25 Processes such that the coupon ticket which is provided by the coupon ticket issue information 64 is registered as coupon ticket movement information 66 into the

distribution destination card 28 as another registration card of the system and the purchased coupon ticket is distributed to other users and used can be simply performed on the user side.

5 Fig. 14 is a functional block diagram for an issue and a movement of coupon tickets by the automatic ticket issuing machines 22-1 to 22-n provided for the reservation system 10 in Fig. 1. First, the automatic ticket issuing machine 22 has a liquid crystal display
10 246, IC card ejecting/inserting slots 248 and 250, a magnetic card ejecting/inserting slot 252, and further, a ticket ejecting/inserting slot 254 on an operation panel. Functions of a coupon ticket issuing module
15 256, a coupon ticket moving module 258, and a temporary card issuing module 260 have been installed as software in the automatic ticket issuing machine 22 by a processor or the like. By using such an automatic ticket issuing machine 22, a purchase of the coupon ticket by using the distribution source card 24, a
20 movement of the coupon ticket from the distribution source card 24 to the distribution destination card 28, further, an issue of the temporary card 30 by the distribution source card 24, and a movement of the coupon ticket to the temporary card 30 can be simply
25 executed by the operation on the user side.

A processing procedure about each of a purchase of the coupon ticket, a use of the purchased coupon

ticket, a movement of the coupon ticket, and an issue of the temporary card in the ticketless system of the invention will now be described. Fig. 15 is a time chart for an issuing process of the distribution source card when the coupon ticket is purchased in the ticketless system of the invention. First, the distribution source card 24 is set into a counter terminal apparatus or an automatic ticket issuing machine provided for the reservation system 10 and an issue of a coupon ticket is requested in step S1. When the issue of the coupon ticket is requested, an interval, a class, and the number of issuing times which are necessary are inputted to the coupon ticket issue information 64 shown in Fig. 10. In the request to issue the coupon ticket in step S1, in addition to the information that was inputted by the user and is necessary to issue the coupon ticket, a collation is performed between the distribution source card 24 and the reservation system 10 by transmitting and receiving a predetermined identification code, thereby collating that the distribution source card 24 relates to the legal purchase of the coupon ticket by the holder himself which has previously been registered in the reservation system 10. As an identification code, for instance, a personal identification code of four digits which the user applied when the distribution source card 24 is issued to the user by the reservation system

10 is used. The system which receives the coupon
ticket issuing request from the distribution source
card 24 executes a setting process of the coupon ticket
purchase information in step S101. Namely, a process
5 to set and record the information derived when the
coupon ticket is issued is executed for the purchase
information file 56 shown in Fig. 4. Subsequently, the
reservation system 10 instructs to update the coupon
ticket issue information to the distribution source
10 card 24 in step S102. That is, on the basis of the
purchase information set in step S101, various
information which is necessary for updating the coupon
ticket issue information 64 for the distribution source
card 24 shown in Fig. 10 is formed, the coupon ticket
15 issue information is sent to the distribution source
card 24, and an updating is instructed. In response to
the updating instruction of the coupon ticket issue
information from the reservation system 10, in step S2,
the coupon ticket issue information is updated on the
20 distribution source card 24 side. Thus, the coupon
ticket issue information as a purchase result of the
coupon ticket is recorded into the distribution source
card 24. For the reservation system 10, the
distribution source card 24 can be used in a range of
25 the coupon ticket for the purpose of a reservation of a
boarding ticket.

Fig. 16 shows a fundamental procedure for a

boarding ticket reserving process using the
distribution source card 24 in which the coupon ticket
is purchased in Fig. 15. In the reservation of the
boarding ticket using the distribution source card 24,
5 first, the distribution source card 24 is set into the
counter terminal apparatus or automatic ticket issuing
machine of the reservation system 10 and a reservation
request in which use year/month/day, a flight name, a
departure time, and the like are designated is
10 executed. Simultaneously with the reservation request,
on the distribution source card 24 side, a reading
transfer operation of the coupon ticket issue
information is executed for the reservation system 10
in step S2. Even in the reservation request as well,
15 in a manner similar to the issue of the coupon ticket
in Fig. 15, a predetermined identification code is sent
from the distribution source card 24 side. On the
reservation system 10 side, a point that the
reservation has been made by the coupon ticket using
20 the distribution source card 24 by the legal holder is
confirmed by collating with the registered
identification code, thereby eliminating the illegal
use. The reservation system 10 which receives the
reservation request from the distribution source card
25 24 side and the transfer of the coupon ticket issue
information executes a reserving process to get the
boarding ticket with regard to the requested

reservation contents in step S101. If the reservation can be made, the reservation system 10 outputs or prints out a message indicative of a reservation result to the user side. In step S102, with respect to a
5 region in the purchase information file 56 in Fig. 4 which is designated by the ID code 75, the purchase information is updated as necessary. In this case, since the distribution source card 24 itself in which the coupon ticket was purchased is used, there is no
10 need to update the purchase information. In step S103, with respect to a region in the career information file 58 in Fig. 5 which is designated by the ID code 75, the necessary information is updated. In this case, since the user is the holder himself of the distribution
15 source card 24, subsequent to the use year/month/day 92, the ID code = A of the holder himself is recorded in the user 94, the number of using times 96 is set to 1, and further, the number of remaining using times 100 is reduced to 9. In step S104, the customer
20 information file 60 shown in Fig. 6 is updated as necessary. In this case, since the purchaser himself of the coupon ticket uses and the customer information of himself has already been recorded at the time of the purchase of the coupon ticket, there is no need to
25 update. In step S105, the updating of the coupon ticket issue information is instructed. In this instance, with respect to the coupon ticket issue

information file 61 provided for the reservation system
10 in Fig. 7, the number of usable times 122 is reduced
by 1. Similarly, an updating instruction to increase
the value of the number of using times 168 in the
5 distribution source card 24 in Fig. 10 by 1 and to
reduce the value of the number of remaining using times
172 by 1 is executed. In response to the updating
instruction of the coupon ticket issue information by
the reservation system 10, in step S2 on the
10 distribution source card 24 side, the coupon ticket
issue information 64 provided in the distribution
source card 24 as shown in Fig. 10 is updated. After
completion of the updating, an end response is returned
to the reservation system 10 and a series of processes
15 are finished.

Fig. 17 shows another procedure for a reserving
process by a coupon ticket for the reservation system
10 using the distribution source card 24. This
procedure is characterized in that in a process in step
20 S102 in the reservation system 10, the number of using
times is calculated in accordance with discount rate
information and the updating of the career information
file in step S104 is executed on the basis of a
calculation result. The other processes are
25 substantially the same as the procedure of Fig. 16. In
the calculation of the number of using times according
to the discount rate information in step S102, first,

on the basis of the individual information 174 in Fig.
10 obtained by the reading transfer of the coupon
ticket issue information in step S2 from the
distribution source card 24, the attribute 146 in the
5 discount rate information file 63 in Fig. 9 is
discriminated and the value of the discount rate 148
corresponding to the relevant attribute 146 is read
out. The discount rate is multiplied to one using
time, thereby obtaining a calculation value of the
10 number of using times. The calculation value of the
number of using times calculated in step S102 is
reflected to the updating of the career information
file in Fig. 5 in step S104 and the number of using
times 96 is recorded as a calculated value of 1 or
15 less. The value of the number of remaining using times
100 is calculated by the calculation value of the
number of using times in this instance and is used as
the number of remaining using times of the coupon
ticket in the distribution source card 24 at that time
20 point.

Fig. 18 shows another form of a procedure for a
reservation of a boarding ticket for the reservation
system 10 using the distribution source card 24 and is
characterized in that in addition to the procedure of
25 Fig. 17, further, a predetermined service is provided
to the owner of the distribution source card 24 in
accordance with the concerned customer information

after the boarding reservation was obtained by the coupon ticket which had been purchased by the distribution source card 24. Namely, the processes in steps S1 to S4 in the distribution source card 24 and
5 in steps S101 to S106 in the reservation system 10 are substantially the same as those in Fig. 17. In addition to them, the reservation system 10 further provides a predetermined service to the user of the distribution source card 24 using the reservation
10 system 10 in accordance with the updated concerned customer ID 112 in the customer information file 60 shown in Fig. 6 after completion of the reserving process. As a service to be provided, for instance, there is a mileage in which a point is added every use
15 or the like.

Fig. 19 is a flowchart for a processing procedure for moving the coupon ticket from the distribution source card 24 to the distribution destination card 28. First, by setting the distribution source card 24 into,
20 for example, the counter terminal apparatus or automatic ticket issuing machine of the reservation system 10, a process by the coupon ticket moving module 52 is allowed to be executed. For this purpose, in step S1, a request to move the coupon ticket is issued
25 from the distribution source card 24. In step S2, the coupon ticket issue information is read and transferred. As a request to move the coupon ticket,

it is sufficient to merely designate the number of
times of the coupon ticket to be moved. When the
movement of the coupon ticket is requested, the user
sends a predetermined identification code to the
5 reservation system 10. On the reservation system 10
side, a point that the use is the legal use of the
distribution source card 24 is confirmed by collating
with the registered identification code. Subsequent
processes are executed. The reservation system 10
10 which received the transfer of the coupon ticket moving
request and the coupon ticket issue information forms
the coupon ticket movement information in step S101.
Specifically speaking, information to be registered
into the coupon ticket movement information file 62 in
15 Fig. 8 is formed. In the information, ID = A of the
distribution source card 24 to be recorded to the
distribution source 128 has an important meaning as
front cover information of the coupon ticket indicating
that the coupon ticket movement information of the
20 distribution destination card 28 serving as a movement
destination relates to the same purchaser as that of
the coupon ticket issue information of the distribution
source card 24. In step S102, the reservation system
10 instructs the distribution destination card 28 side
25 to update the coupon ticket movement information. In
this instance, since the automatic ticket issuing
machine 22 provided for the reservation system 10 has

the two IC card ejecting/inserting slots 248 and 250 as shown in, for example, Fig. 14, the moving operation of the coupon ticket in which both of the distribution source card 24 and distribution destination card 28 are simultaneously set can be realized. Therefore, the distribution destination card 28 side updates the coupon ticket movement information on the basis of the updating instruction of the coupon ticket movement information from the reservation system 10 in step S201. Namely, the contents of the coupon ticket movement information 66 of the distribution destination card 28 in Fig. 11 are recorded and updated. When an end response by the updating of the coupon ticket movement information 66 is obtained from the distribution destination card 28 side, the reservation system 10 updates the coupon ticket issue information 64 as shown in Fig. 10 for the distribution source card 24 in step S103. Specifically speaking, the value of the number of times of distribution 170 in the coupon ticket issue information 64 is increased by 1 and the number of remaining using times 172 is reduced by 1. It will be obviously understood that on the reservation system 10 side, in association with the movement of the coupon ticket, the updating of the corresponding information in "distribution" of the processing division 74 in the purchase information file 56 in Fig. 4 and the recording and updating of the corresponding

information regarding the customer ID 102 of the distribution destination card 28 serving as a movement destination of the coupon ticket in the customer information file 60 in Fig. 6 are executed together.

5 Fig. 20 is a time chart for a procedure of a boarding reservation by the distribution destination card 28 in which the coupon ticket was moved in Fig. 19. The reserving process using the distribution destination card 28 is fundamentally the same as the
10 reserving process of the distribution source card 24 in Fig. 16 except that the reservation source is merely the distribution destination card 28. That is, in response to the reserving request in step S201 of the distribution destination card 28 and the reading
15 transfer of the coupon ticket movement information in step S202, the reservation system 10 executes the reserving process in step S101 and obtains the boarding reservation. In steps S102 to S104, the purchase information file, the career information file, and
20 further, the customer information file are updated. As for the updating of the purchase information file 56, with respect to a column of "distribution" of the processing division 74 in Fig. 4, the number of times of distribution 82, the distribution year/month/day 84,
25 and further, the distribution destination information 88 are respectively recorded and registered. As for the career information file 58 in Fig. 5, in

association with the use of the distribution destination card 28 which received the movement of the coupon ticket, at least the use year/month/day 92, the user 94, the number of using times 96, and the number of remaining using times 100 are updated. Further, in the customer information file 60 in Fig. 6, since the registration has already been finished at the time of the movement of the coupon ticket in Fig. 19, there is no need to update in this case. After completion of the updating of the various information files, in step S105, the updating of the coupon ticket movement information is instructed to the distribution destination card 28. Prior to updating the coupon ticket movement information, with respect to the coupon ticket movement information file 62 in Fig. 8, the number of using times 136 is increased by 1. The use year/month/day obtained by the reserving process are recorded in the use career 140. The distribution destination card 28 which received the updating instruction of the coupon ticket movement information from the reservation system 10 updates the coupon ticket movement information in step S203. Specifically speaking, in the coupon ticket movement information 66 recorded in the distribution destination card 28 in Fig. 11, the number of using times 200 is increased by 1 and the number of remaining using times 202 is decreased by 1.

Fig. 21 shows another embodiment of a reserving process by the distribution destination card 28 which received the movement of the coupon ticket. The embodiment is characterized in that in a manner similar to the embodiment of the reservation by the distribution source card 24 in Fig. 17, the number of using times is calculated by using the discount rate obtained from the discount rate information file 63 in Fig. 9 in accordance with the attribute of the coupon ticket movement information in step S102, and on the basis of the calculated number of using times, the values of the number of using times 96 and the number of remaining using times 100 in the career information file 58 in Fig. 5 are updated in step S104. The other processes are substantially the same as those in Fig. 20.

Fig. 22 shows another procedure of a reserving process using the distribution destination card 28 which received the movement of the coupon ticket and is characterized in that in a manner similar to the embodiment of Fig. 18 showing the reservation by the distribution source card 24, after the end of the reservation, a predetermined service is provided in accordance with the concerned customer information in the updated customer information in step S107 of the reservation system 10. Namely, at the end of the reservation using the distribution destination card 28,

from the concerned customer ID in the customer information file 60 in Fig. 6, it will be found that the user of the customer ID = B using the distribution destination card 28 is not the purchaser himself of the coupon ticket, so that he is not the inherent customer. Therefore, an arbitrary premium service is provided to the user using the distribution destination card 28, thereby persuading the user to become a purchaser of the coupon ticket. With this method, it is possible to execute an activity for making the user of the distribution destination card 28 become an inherent customer of the system who purchases the coupon ticket. As a service to the user of the distribution destination card 28, at the time of a check-in at an airport counter using the distribution destination card 28, a passage at a boarding gate, a confirmation of the boarding in the airplane, or the like, a message indicating that the passenger is the user having the distribution destination card 28 which received the movement of the coupon ticket or the like is informed to a counter staff, a gate staff, and a steward on the reservation system 10 side. For example, a flight crew gives a greeting or the like to the user of the distribution destination card 28 while expressing thanks for the use of the coupon ticket. With this method, an effective activity for making the owner of the distribution destination card 28 become the

customer of the system as an inherent coupon ticket purchaser can be executed.

Fig. 23 is a flowchart for a procedure to issue a temporary card in the system of the invention. First,
5 the distribution source card 24 is set into the counter terminal apparatus or automatic ticket issuing machine in the system. In step S1, a request to issue the temporary card and a reading transfer of the coupon ticket issue information are executed to the
10 reservation system 10. When the issue of the temporary card is requested, a collation by the identification code can be also obviously performed. The reservation system 10 which received the issuing request of the temporary card and the transfer of the coupon ticket
15 issue information executes an updating process regarding "temporary distribution" with regard to the processing division 74 in the purchase information file 56 in Fig 4 in step S101. That is, "temporary distribution" is recorded in the processing division
20 74, the number of using times designated by the issuing request is recorded into the number of times of distribution 82, and further, issue year/month/day of the temporary card are recorded into the processing year/month/day 84, and the number of issuing temporary
25 cards 90 is increased by 1. In this instance, since the temporary card 30 is not registered in the system, the reservation system 10 inputs the name 104, address

106, and telephone number 108 which are necessary for the recording of the customer information file 60 in Fig. 6 to the user who receives the issue of the temporary card 30. Subsequently, the reservation
5 system 10 sets coupon ticket movement information for the temporary card 30 as a target with respect to the coupon ticket movement information file 62 in Fig. 8 in step S102. In this case, since the card is the temporary card, "temporary" is recorded in the
10 attribute 138. An instruction is made so as to form the coupon ticket movement information as shown in Fig. 12 based on the recording contents in the coupon ticket movement information file 62 in Fig. 8 and to set it into the temporary card 30 side. In response to the
15 instruction, on the temporary card 30 side, a setting process for recording the coupon ticket movement information 68 having the contents in Fig. 12 onto the temporary card 30 is executed in step S301. After completion of the setting of the coupon ticket movement
20 information in the temporary card 30, the reservation system 10 instructs to update the coupon ticket issue information in step S103. In this instance, in the reservation system 10, the number of times of distribution 124 in the coupon ticket issue information
25 file 61 in Fig. 7 is increased by 1. The ID code indicative of the owner of the temporary card 30 is recorded to the distribution destination 126. The

updating instruction of the coupon ticket issue
information in step S103 becomes an instruction to
increase the value of the number of times of
distribution 170 in the coupon ticket issue information
5 64 recorded on the distribution source card 24 in Fig.
10 by 1. In response to the updating instruction, on
the distribution source card 24 side, in step S3, an
updating process to increase the value of the number of
times of distribution 170 of the distribution source
10 card 24 by 1 is executed in step S3. When the
temporary card 30 is issued in Fig. 23, on the system,
since the user is not registered and it is necessary to
return the temporary card 30 at the end of the use, it
is desirable to keep a deposit when the temporary card
15 30 is issued.

Fig. 24 is a time chart showing a procedure for a
reserving process using the temporary card 30 issued in
Fig. 23. First, a reservation request in step S301 and
the reading transfer of the coupon ticket movement
20 information in step S302 in the temporary card 30 are
substantially the same as those in case of the
reservation using the distribution destination card 28
in Fig. 20. Processes in steps S101 to S105 on the
reservation system 10 side in association with those
25 processes are also similar to the processes in case of
the distribution destination card 28 in Fig. 20. The
updating of the coupon ticket movement information in

step S303 is also similar to that in Fig. 20 except only a different point that the card used for the reservation is either the distribution destination card 28 or the temporary card 30. According to the

5 reserving procedure using the temporary card 30 as mentioned above, after completion of the series of processes in association with the reservation in steps S101 to S105 in the reservation system 10, in step S106, a confirmation about the issue of a formal card

10 is executed to the temporary card 30 side. In response to the confirmation of the issue of the formal card, on the temporary card 30 side, when the issue of the formal card is requested as shown in step S304, the reservation system 10 executes a process to issue the

15 formal card in step S107. In the process to issue the formal card, since the information necessary for a registration has already been obtained at the time of the issue of the temporary card in Fig. 23, a registration ID code on the reservation system 10 is

20 newly allocated on the basis of the request to issue the formal card and is recorded to the temporary card 30. By receiving the allocation and registration of the ID code registered on the system, the temporary card 30 functions as a formal registration card,

25 namely, the distribution destination card 28. Subsequently, in step S108, the card kind 116 in the customer information file 60 in Fig. 6 is updated from

"temporary use" to "registration". On the temporary card 30 side which received the instruction of the formal card issuing process in step S107 of the reservation system 10, in step S305, the attribute 236
5 in the coupon ticket movement information 68 shown with respect to the temporary card 30 in Fig. 12 is set from "temporary" to "registration", thereby enabling the temporary card 30 to be used as a formal card.

Processing functions of the coupon ticket issuing
10 module 50, coupon ticket moving module 52, temporary card issuing module 54, and further, use processing module 48 provided for the reservation system 10 of the invention in Fig. 3 will now be described with reference to flowcharts, respectively.

15 Fig. 25 shows the coupon ticket issuing process by the coupon ticket issuing module 50 in Fig. 3. First in step S1, the distribution source card 24 is set into, for example, the counter terminal apparatus or automatic ticket issuing machine of the reservation
20 system 10. In step S2, the coupon ticket purchase information of the owner of the distribution source card 24 is formed on the basis of the coupon ticket issuing request by the card owner. Subsequently, in step S3, the purchase information file 56 is
25 registered. In step S4, the coupon ticket issue information of the distribution source card is updated in step S4. The series of coupon ticket issuing

processes are finished.

Fig. 26 is a flowchart for the coupon ticket moving process by the coupon ticket moving module 52 provided for the reservation system 10 in Fig. 3.

- 5 First in step S1, for instance, since the automatic ticket issuing machine 22 of the reservation system 10 has two IC card ejecting/inserting slots 248 and 250, the distribution source card 24 and distribution destination card 28 are simultaneously set.
- 10 Subsequently, in step S2, the number of coupon tickets to be moved is inputted and the movement is requested. In this instance, with regard to the distribution source card 24 and distribution destination card 28, a confirmation about the legal use can be also performed
- 15 by inputting a predetermined identification code. In step S3, the coupon ticket movement information is formed. In step S4, the coupon ticket movement information 66 of the distribution destination card 28 is updated. Further in step S5, the coupon ticket
- 20 issue information is formed. In step S6, the coupon ticket issue information of the distribution source card 24 is updated. The series of coupon ticket moving processes are finished.

- Fig. 27 is a flowchart for another embodiment of
- 25 the coupon ticket moving process and relates to a process in the case where both of the distribution source card 24 and distribution destination card 28 of

the coupon ticket cannot be simultaneously set and is characterized in that the distribution source card 24 and distribution destination card 28 are sequentially set and the coupon ticket moving process is executed.

5 As for the coupon ticket moving process, for instance, in the coupon ticket moving module 244 of the portable terminal apparatus 26 in Fig. 13, since only one reader/writer of the IC card is ordinarily provided, the coupon ticket moving process according to the
10 flowchart of Fig. 27 is necessary. With respect to the automatic ticket issuing machine 22 in Fig. 14 as well, when there is only one IC card ejecting/inserting slot, the coupon ticket moving process in Fig. 27 is executed.

15 In the coupon ticket moving process of Fig. 27, first in step S1, the distribution source card 24 is set. In step S2, a moving request by inputting the number of tickets to be moved is performed. In this instance, a collation by the identification code which
20 has been determined on the system can be also executed with regard to the distribution source card 24. In step S3, coupon ticket movement information is formed. In step S4, the distribution destination card 28 is inserted and set in place of the distribution source
25 card. In step S5, the coupon ticket movement information of the distribution destination card 28 is updated. In step S6, the distribution source card 24

is inserted and set in place of the distribution destination card. In step S7, the coupon ticket issue information is formed. In step S8, the coupon ticket issue information of the distribution source card 24 is
5 updated. The series of coupon ticket moving processes are finished.

Fig. 28 is a flowchart for an issuing process by the temporary card issuing module 54 in Fig. 3. For simplicity of explanation, the case of using the
10 automatic ticket issuing machine 22 having two IC card ejecting/inserting ports shown in Fig. 14 is shown as an example. First in step S1, the distribution source card 24 and temporary card 30 are set. In step S2, the number of tickets to be moved is inputted and the issue
15 is requested. In step S3, the coupon ticket movement information is formed. In step S4, the coupon ticket movement information is registered into the temporary card 30. In step S5, the coupon ticket issue information is formed. In step S6, the coupon ticket
20 issue information of the distribution source card 24 is updated.

Fig. 29 is a flowchart for the use processing module 48 provided for the reservation system 10 in Fig. 3 and relates to a reserving process as an
25 example. First in step S1, a card reading operation and a reserving process by the setting of the distribution source card 24, distribution destination

card 28, or temporary card 30. In this instance, a collating process about the legal use is executed by using a predetermined identification code with respect to each card, thereby excluding the illegal use of the card by, for instance, a theft, a lost, or the like.

In step S2, a check is made to see if the card is a temporary card. In case of a card other than the temporary card, step S3 follows and a check is made to see if the discount attribute has been set. When the discount attribute has been set, step S4 follows. A discount rate corresponding to the attribute is obtained from the discount information file and the number of using times is calculated. In step S5, the purchase information file is updated. In step S6, the career information file is updated. Further, in step S7, the customer information file is updated. In step S8, a check is made to see if the card is a distribution source card. In case of the distribution source card, step S9 follows and the coupon ticket issue information file and the coupon ticket issue information on the card side are updated. The series of processes are finished. In case of the distribution destination card in step S8, step S10 follows. The coupon ticket movement information file and the coupon ticket movement information on the card side are updated. In step S11, the presence or absence of the concerned customer service is checked. If there is a

concerned customer service, a predetermined service according to the concerned customer information of the customer information file is provided in step S12. In this service, a premium service to recommend a purchase
5 of the coupon ticket to the user of the distribution destination card which received the movement of the coupon ticket is performed or a message for allowing a counter staff, a gate staff, a steward, or the like to make a greeting to the user of the distribution source
10 card is notified at the time of a ticket issue, a check-in, or a passage at a boarding gate. On the other hand, when the use card is a temporary card in step S2, the purchase information file is updated in step S13. The career information file is updated in
15 step S14. The customer information file is updated in step S15. After that, the coupon ticket movement information file and the coupon ticket issue information on the card side are updated in step S16. In step S17, the presence or absence of the issue of
20 the formal card is confirmed for the owner of the temporary card. When a request to issue the formal card is obtained in step S8, step S19 follows and the formal card issuing process is executed. Namely, the updating of the customer information file and the
25 updating of the coupon ticket movement information corresponding to the formal card are executed. By the processes in steps S17 to S19, with respect to the user

of the transitory temporary card to which a part of the coupon ticket was distributed from the purchaser of the coupon ticket, it is possible to effectively acquire the new customer for changing such a user to the user
5 of the card registered in the system. As means other than Fig. 29, the use of the coupon ticket using the IC card is processed in a ticketless manner by a coupon ticket issue in an airport, an agency, or the like, a check-in at an airport counter, a passage at a boarding
10 gate, a confirmation after boarding, or the like. The necessary information is updated on the system side and on the IC card side.

According to the present invention as mentioned above, in the ticketless system of an airplane or the
15 like, the issue of the coupon ticket using the IC card and the free movement on the user side after the ticket was purchased are enabled, so that the perfect ticketless system using the IC card is realized and a high efficiency of office work processes can be
20 accomplished. Since the movement of the coupon ticket on the card can be freely executed on the user side, a usability of the coupon ticket can be remarkably raised. Further, by using the standardized IC card issued from the bank as an IC card that is used in the
25 ticketless system, even if a service providing enterprise differs, the card can be used. An efficient use of the service providing system using the IC card

can be accomplished.

The above embodiment has been shown with respect to the boarding ticket reservation system of the airplane as an example. However, with respect to the use of a proper passenger transportation traffic facility such as train, ship, or the like in which the coupon ticket can be used and, further, the use of a facility such as theater, movie theater, or the like which can be used by the coupon ticket, a ticketless system which enables the issue of the coupon ticket using the IC card and the movement of the coupon ticket to another user can be constructed in substantially the same manner.

CLAIMS:

1. A ticketless system for use in transportation
such as air travel or a toll facility by
using information stored in a card in which a processor
5 and a memory are installed, comprising:
a coupon ticket issuing module for recording
coupon ticket issue information which enables the use,
a plurality of times, of a distribution source
card serving as a distribution source;
10 a coupon ticket moving module for moving part of
a coupon ticket of said distribution source card as
coupon ticket movement information to a distribution
destination card serving as a distribution destination
and enabling it to be used; and
15 a use processing module for processing a use such
as reservation, ticket issue, check-in, boarding, or
the like on the basis of the coupon ticket issue
information of said distribution source card or the
coupon ticket movement information of said distribution
20 destination card.
2. A system according to claim 1, wherein each of
said distribution source card and said distribution
destination card is a registration card which has
25 previously been registered on the system in the personal
name of a user.

3. A system according to claim 1 or 2, further comprising a temporary card issuing module for issuing a temporary card for a user whose name is not registered on the system, and wherein said coupon ticket moving module
5 is operable to move the coupon ticket of said distribution source card as coupon ticket movement information onto said temporary card, thereby enabling it to be temporarily used.

10 4. A system according to claim 1, 2, or 3, wherein as coupon ticket issue information of said distribution source card, ID information of a card holder corresponding to a front cover of the coupon ticket, a use range such as an interval or the like, the number of serial coupon
15 tickets, the number of using times, the number of times of distribution, the number of remaining using times, personal information such as the age of the card holder, a card attribute, purchase year/month/day, a purchasing location, and the like are recorded.

20

5. A system according to claim 1,2,3, or 4, wherein as coupon ticket movement information of said distribution destination card, holder ID information of said distribution source card corresponding to a front cover
25 of a coupon ticket, a use range such as an interval or the like, the number of times of distribution, the number of using times, the number of remaining using

times, personal information such as the age of the card holder, a card attribute, purchase year/month/day, a purchasing location, and the like are recorded.

5 6. A system according to claim 3,4, or 5, wherein as coupon
ticket movement information of said temporary card,
holder ID information of said distribution source card
corresponding to a front cover of a coupon ticket, a
use range such as an interval or the like, the number
10 of times of distribution, the number of using times,
the number of remaining using times, personal
information such as the age of the card holder, a card
attribute, purchase year/month/day, a purchasing
location, and the like are recorded.

15

7. A system according to any preceding claim, further having a
purchase information file for recording and managing an
issuing situation of a coupon ticket; a career
information file for recording and managing a use
20 situation of the coupon ticket issued; a customer
information file for recording and managing personal
information regarding a user of the coupon ticket
issued; and a discount information file for recording
and managing a discount rate which is used for
25 calculation of the number of using times.

8. A system according to claim 7, wherein:

in said purchase information file, a processing
division of a purchase, a movement, or a temporary use
of the coupon ticket, use contents such as an interval
and the like, a class, the number of serial coupon
5 tickets, the number of moving times, a movement
destination, processing year/month/day, a term of
validity, settlement information, the number of issuing
tickets of a temporary card, and the like are recorded
and managed;

10 in said career information file, use
year/month/day, name of the user, the number of using
times, and the number of remaining using times are
recorded and managed;

in said customer information file, a customer ID,
15 name of the user, an address, concerned customer
information, a customer kind, and a card kind are
recorded and managed; and

further, in said discount information file, a
discount rate which has been predetermined in
20 accordance with the age of the user, a time zone, or the like
is recorded and managed.

9. A system according to claim 7 or 8, wherein at the time
of a reserving process of the coupon ticket based on
25 said distribution source card, said distribution
destination card, or said temporary card, said use
processing module is operable to provide a predetermined service to a

holder of said distribution source card with reference to said customer information file.

10. A system according to claim 9, wherein when a
5 reservation user is a holder of said distribution destination card, said use processing module is operable to form information indicative of a new customer who will newly become a target of a purchase of the coupon ticket and to notify a service providing side of new customer
10 information at the time of the check-in and the boarding.

11. A system according to claim 7,8,9,or 10,wherein said use processing module is operable to obtain the corresponding discount
15 rate with reference to said discount information file at the time of the reservation, to calculate the number of using times by said discount rate, and to update the number of remaining using times of said career information file.

20

12. A system according to claim 3, or any of claims 4 to 11 as appended to claim 3, wherein when the use by said temporary card is processed, said use processing module is operable to confirm the presence or absence of an issue of a formal registration card
25 registered in the system to the user, and when a request to issue a formal registration card is received from the user, to issue a formal distribution _____

destination card in which the coupon ticket movement information of said temporary card has been recorded.

13. A system according to any preceding claim, wherein said
5 use processing module is operable to process a reservation, and issues a magnetic card or a ticket serving as a single-use ticket for the reservation using said distribution source card, said distribution destination card, or said temporary card.

10 14. A system according to any preceding claim, wherein said coupon ticket moving module is provided in a portable terminal apparatus of a user, whereby said terminal apparatus is operable to move the coupon ticket from said distribution source card to said distribution destination card.

15 15. A system according to claim 3, or any of claims 4 to 14 as appended to claim 3, wherein said coupon ticket issuing module, said coupon ticket moving module, and said temporary card issuing module are provided in a counter terminal apparatus or an automatic ticket
20 issuing machine of the system, thereby arranged to combine the functions of issue of the coupon ticket to said distribution source card, movement of the coupon ticket from said distribution source card to said distribution destination card, and further, issue of a temporary card in which part of the coupon ticket was moved from said
25 distribution source card.

16. A system according to any preceding claim, wherein said coupon ticket is a boarding coupon ticket of an airline.

17. A ticketless processing method for use in
5 transportation such as air travel or a
toll facility by using information stored in a card in
which a processor and a memory are installed,
comprising:

a coupon ticket issuing step of recording coupon
10 ticket issue information which enables the use, a
plurality of times, of a distribution source
card serving as a distribution source of the coupon
ticket;

a coupon ticket moving step of recording coupon
15 ticket movement information for moving (part of) the coupon
ticket of said distribution source card to a
distribution destination card serving as a distribution
destination and for enabling it to be used; and

a use processing step of processing a use such as
20 reservation, ticket issue, check-in, boarding, or the
like on the basis of the coupon ticket issue
information, or on the basis of the coupon ticket movement
information of said distribution source card and/or said
distribution destination card.

25 18. A method according to claim 17, wherein each of
said card to store said coupon ticket issue information
and said card to store said coupon ticket movement

information is a registration card which has previously been registered on the system in the personal name of a user.

5 19. A method according to claim 17 or 18, further
having a temporary card issuing step of issuing a
temporary card for a user whose name is not registered
on the system, and wherein in said coupon ticket moving
step, the coupon ticket is moved as coupon ticket
10 movement information from said distribution source card
to said temporary card, thereby enabling it to be
temporarily used.

20. A memory medium carrying a ticketless system
15 processing program, for use in transportation such as
air travel or a toll facility, the program comprising:
a coupon ticket issuing module for recording
coupon ticket issue information which enables the use,
a plurality of times, of a distribution source card
20 serving as a distribution source;

a coupon ticket moving module for moving part of
the coupon ticket of said distribution source card as
coupon ticket movement information onto a distribution
destination card serving as a distribution destination,
25 thereby enabling the distribution destination card to
be used; and

a use processing module for processing a use such

as reservation, ticket issue, check-in, boarding, or
the like on the basis of the coupon ticket issue
information of said distribution source card or the
coupon ticket movement information of said distribution
5 destination card.

21. A medium according to claim 20, wherein said
program is arranged for use with said distribution
source card and said distribution destination card both
10 in the form of registration cards which have previously
been registered on the system in the personal name of a
user.

22. A medium according to claim 20 or 21, wherein said
15 program further comprises a temporary card issuing
module for issuing a temporary card for a user whose
name is not registered on the system, and wherein said
coupon ticket moving module is operable to move the
coupon ticket of said distribution source card as
20 coupon ticket movement information onto said temporary
card, thereby enabling it to be temporarily used.

23. A system according to any of claims 1 to 16, in
operable combination with a memory medium carrying a
25 ticketless system processing program, for use in
transportation such as air travel or a toll facility,
the program comprising:

a coupon ticket issuing module for recording coupon ticket issue information which enables the use, a plurality of times, of a distribution source card serving as a distribution source;

5 a coupon ticket moving module for moving part of the coupon ticket of said distribution source card as coupon ticket movement information onto a distribution destination card serving as a distribution destination and enabling it to be used; and

10 a use processing module for processing a use such as reservation, ticket issue, check-in, boarding, or the like on the basis of the coupon ticket issue information of said distribution source card or the coupon ticket movement information of said distribution
15 destination card.

24. A computer-readable memory carrying a program to implement a ticketless processing method according to any of claims 17 to 19.

20

25. A ticketless system substantially as hereinbefore described with reference to the accompanying drawings.



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Claims searched: 1 to 19, 23, 25

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Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): G4T (TAA TAE TAX) G4V (VAK)

Int Cl (Ed.6): G07B 1/00 3/00 G07F 7/00 7/08 7/10

Other: ONLINE: EDOC, WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	EP 0708424 A1 (ACCUMULATA SYMI GRUNDSTÜCKS) Whole document	1, 17
X	EP 0518808 A2 (ASCOM) Whole document	1, 2, 13, 17, 18
X	EP 0421808 A2 (MANSVELT) Whole document, especially column 2 lines 9 to 13	1, 2, 17, 18
P,X	WO 97/02548 A1 (NATIONAL WESTMINSTER BANK) Whole document	1, 2, 17, 18
P,X	WO 96/36025 A2 (NATIONAL WESTMINSTER BANK) Whole document, especially page 1 lines 6 to 9	1, 2, 17, 18
X	WO 91/16691 A1 (JONHIG) Whole document, especially page 7 lines 4 to 6, 19 and 20	1, 2, 17, 18

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
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